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CONTENTS

EDITORIAL:
Editorial Notes 739
The Eastern Enginemen's Demands..... 740
The Interests Represented on the Orient Protective Committee..... 740
State Interference with Interstate Commission..... 741
New Books 742

LETTERS TO THE EDITOR..... 742

ILLUSTRATED:
Construction of the Bingham & Garfield..... 744
Santa Fe Dynamometer Car; by H. B. MacFarland..... 750
Fast Run on the Reading; by Paul T. Warner..... 755
Bridge Construction on the Oregon Trunk Railway..... 756
Forged High Speed Twist Drill..... 765
Coaling Station for the Lake Shore..... 766

MISCELLANEOUS:
The I. C. C. Claims Jurisdiction Over State Rates..... 747
Workings of the Erdman Act; by Charles P. Neill..... 759
Control of Supplies by the Supply Department..... 763
Foreign Railway Notes 744, 750

GENERAL NEWS SECTION..... 767

BECAUSE of the severity of the past winter more than ordinary interest attaches to the performance of the American Locomotive Company's experimental Pacific type locomotive, No. 50,000, which is now in passenger service on the Erie, and which was described in the *Railway Age Gazette* of December 29, 1911. From November 17 to February 25 schedule speed was maintained for 96 per cent. of the time, or for 163 out of 170 runs. During November and December the locomotive made daily round trips between Jersey City and Port Jervis, 89 miles each way, and early in January the run was extended through to Susquehanna from Jersey City, 193 miles, allowing a lay-over of only 1½ hours at the western terminal. These two divisions have a number of heavy grades and sharp curves; for instance, the profile over the Susquehanna hill on the Delaware division shows a rise of 373 ft. in 6 miles, an average of 1.18 per cent., the grade varying from 0.96 per cent. for 1,000 ft. to 1.47 per cent. for 300 ft. For four months the train frequently pulled as many as 11 or 12 cars and averaged 9. In 170 runs 1,379 minutes were made up, or an average of 8 minutes per trip. On only seven runs was any time lost by the locomotive which was not more than made up before the terminal was reached. In each of these cases the delays were such that the locomotive could not be held entirely responsible. During the coldest days in January, from the 5th to the 8th, 120 minutes were made up in eight runs, or an average of 15 minutes per trip between Jersey City and Susquehanna. In the coldest weather in February, from the 5th to the 10th, the schedule time was bettered by an average of 10 minutes for each of 12 runs. The schedule from Jersey City to Susquehanna is 35 miles an hour, including frequent stops, and the rule of the road, which is rigidly enforced, limits the speed to 60 miles an hour. The experimental locomotive has thus indicated its ability to meet the requirements of heavy fast passenger service, with a good margin for exceptional requirements. This performance is all the more remarkable when the low weight of the locomotive, compared with the ordinary Pacific type, is considered. Tests have shown that the experimental locomotive can develop in actual service 1 h. p. for each 121.4 lbs. of total weight, which indicates that it is approximately 25 per cent. more efficient than the average locomotive of this type. This surprising result has been obtained by taking advantage of the most approved developments in locomotive design, by carefully proportioning the details and by using the best grade of materials. The weight thus saved was used in providing a boiler of large capacity, thus giving the locomotive more "lungs," or greater ability to operate under sustained heavy service. It is hoped that the results of dynamometer tests which were made during February will soon be available for publication.

THE old railway commission of Connecticut which went out of existence a few months ago was one of feeble personal abilities, political in character and untrained in its work. It has been succeeded by a public utilities commission which, while technically untrained, is a body of better personnel and, under the new state law, is prohibited from political work. The commission has just rendered a decision of much significance to steam railway companies owning large street railway systems. The question involved was the lowering, as asked for by a public petition, of the fare between Hartford and Manchester—about 10 miles—from 15 to 10 cents. The commission ruled that in fixing such a fare, while local conditions must be considered, original cost, as well as later capitalization, is not to be the test, but *present* cost of reproduction; and, although to some extent it segregates the property in making its decision not to reduce the fare, it emphasizes an opposite view, saying: "That the income of any particular line or branch of a street railway, which may be operated at a large profit to the company and helps to maintain the unprofitable lines, should be reduced to a bare reasonable income would, in our opinion, work a general hardship to the state, would minimize the investment of capital in street railway operation, and would retard the development of rural districts which depend so largely on street railway facilities." The commission cites a Canadian telephone decision to uphold its opinion. It means, from the commission's viewpoint, that, in adjusting local fares upon one of the component parts of a large street railway system, that system must be taken into account as a whole; that, for example, the part must bear its share of the costs of general management, and, presumably, the financial condition of the owning corporation be considered. That such an adjustment of a general situation to a local one may be difficult does not affect the principle. The bearing of such a finding in a New England state, where street railways have been excessively capitalized, on steam railway investments in street railways—like those of the New Haven, the New York Central, the Delaware & Hudson and the Southern Pacific—is obvious.

THE EASTERN ENGINEMEN'S DEMANDS.

NEGOTIATIONS between the enginemen and the managers of the eastern railways came to an end, for the present, when the managers announced, last Monday, their decision not to grant the request of the enginemen for increased pay and offered no alternative proposal. It would seem that the burden now rests on the enginemen to show that it would be to the best interest of the country that wages and conditions of service be standardized and on such a scale as will result in increased wages. To do this they must disprove what seems to be a strong case on the part of the managers. The latter say that the enginemen's demands would make the railways pay enginemen in eastern territory some $7,500,000, or 18.6 per cent., more than at present, and for the same service now being rendered. Less than two years ago the pay of the enginemen was increased 10.7 per cent., and the managers contend that since that time there has been no substantial change in the conditions of service. The inconsistencies in a standard scale in a territory where the conditions of operation vary so widely as in the East are so easily understood that the public should require a pretty full explanation as to why the enginemen feel justified in asking it.

The most vital of the managers' reasons for refusal is that they cannot afford it. The advances in 1910 were made in expectation of the much needed advance in freight rates which the Interstate Commerce Commission declined to allow, and enforced reductions of rates have been more or less continuous since that time. Can the public consistently feel that it is right for the railways to pay more for the same service, but that it is not right for the shippers to pay the railways more for the same service? It should remember that in the settlement of the railway strike in England last fall the government assured the railways that legislation would be introduced to the effect that, in future, an increase in the cost of labor is to be considered a valid justification for a reasonable general increase in freight rates. It must consider also that recent legislation has made railways spend money for which their stockholders receive no return, and for which the public at large receives no return; but certain of the employees do get some of this additional money, and without giving additional service. And it should be remembered also that the federal employees' compensation bill, now pending, provides that the cost of complying with the law be charged to operating expenses.

The case for the enginemen, as so far brought out, does not rest on such substantial grounds. They say they are entitled to more money, because they are not paid as much as western enginemen; because advances in enginemen's wages have not kept pace with advances of wages in other classes of railway labor (so that in some cases the conductor is paid more than the engineman); and because their wages have not been advanced commensurately with the increased work and responsibility required in handling heavy locomotives. It may properly be asked why a man should not be paid what he is worth without regard to what someone else is paid for doing an entirely different kind of work, particularly when it is, to say the least, a question whether the other man deserves the pay he is getting. It is, indeed, in accordance with precedent to recognize "the custom of the trade" and admit that an engineman should be paid more than the conductor of his train, but the representatives of the enginemen have not given the specific instances in which they say the reverse is true; and it is believed that these exceptions are so few that they should be dealt with by themselves and not considered in connection with the main question. As to the increased labor and responsibility of enginemen, evidence is needed to show the extent of this. Finally, the public should know whether or not there is any general dissatisfaction among the rank and file with their wages and conditions of service, or whether this movement is primarily one starting from the top and not from the bottom, and is really a matter of inter and intra-union policy rather than anything which affects favorably or adversely the well-being of the general public.

THE INTERESTS REPRESENTED ON THE ORIENT PROTECTIVE COMMITTEE.

A STUDY of the personnel of the bondholders' committee of the Kansas City, Mexico & Orient may well lead to certain speculations as to the road's future which are at least tenable as theories. Lord Monson and a good many of the other members of the committee are quite evidently representatives of English bondholders. There are, however, five men on the committee who are capable, at least, of representing American railways that are strongly interested in the future of the K. C., M. & O. There are three roads—the Wabash, the Chicago & Alton and the Chicago Great Western—which serve the territory north and northeast of Kansas City and which are in a sense bottled up at Kansas City in respect to traffic originating southwest of there. The Chicago, Burlington & Quincy reaches Kansas City, and its Colorado & Southern line crosses the Kansas City, Mexico & Orient not far from the Red river in Texas. The Southern Pacific will have three connections with the K. C., M. & O.—two in Texas and one on its lines in the west coast country of Mexico.

Any one of these five railways would probably find the Orient, when it is completed, a very useful subsidiary. The Southern Pacific could use it as an alternative line for traffic which it now turns over to the Rock Island at El Paso; to the Burlington it would give a line which could be used as supplemental to the Colorado & Southern; and to any one of the other three roads it would give a very valuable connection with Mexico.

It has been pointed out before that when the K. C. M. & O. is completed it will form the shortest line from Kansas City to the Pacific coast. Its traffic possibilities, however, are far more important than would be suggested simply by this fact. With a connection with the National Railways of Mexico at Eagle Pass, west of Laredo, the K. C., M. & O. will form the shortest line between Chicago and the city of Mexico. The entire country of Mexico will naturally be tributary to its lines on traffic moving to or from Chicago and the lakes; the west coast lines of the Southern Pacific will probably naturally interchange traffic from or to its territory destined to or bound from Chicago and the lakes. Traffic which the National Railways of Mexico now takes to El Paso, and which the Southern Pacific, the Santa Fe and the Rock Island all compete for, could be sent by the shorter route to Eagle Pass and there be divided simply between the Southern Pacific and the Orient.

It is claimed that there are extensive coal fields not far northwest of Topolobampo on the proposed line of the Orient; and since steamers from Liverpool bound for Honk Kong via the Panama canal will pass as close in to Topolobampo as possible to get the short sailing route, vessels may be expected quite naturally to make that town a port of call. Since Topolobampo is more nearly half way betwen Liverpool and Hong Kong than is the isthmus of Panama, if coal can be taken on at Topolobampo it will be a considerable advantage for vessels to coal here rather than at the isthmus. Considerably the shortest route between the Hawaiian islands and Chicago will be by way of the Orient to Topolobampo; and, since this is a Mexican city, foreign vessels may be loaded here for a point on the Pacific coast or for the Hawaiian islands, while from San Francisco and Portland only American vessels can be used.

From this cursory mention of the traffic possibilities of the completed K. C. M. & O. it is very easy to understand why banking interests and railway interests were opposed to Mr. Stilwell's control of an independent line such as the K. C. M. & O., and it is also easy to understand why the various railway interests mentioned should be greatly interested in the plan of reorganization of the company and probably represented on the bondholders' protective committee.

There have been rumors that Mr. Stilwell has resigned from the presidency of the company. The road, since it is in the hands of receivers, is being managed under the direction of the court. The presidency of a company in the hands of a receiver means very little unless the man who holds it also represents

the interests of large holders of securities of the company. Mr. Stilwell has not resigned as president of the company, but since the protective committee represents the interests of the bondholders, and a committee of which Mr. Stilwell is not a member represents the interests of the construction company, as a matter of fact the management of the road and the plans for reorganization of the company are not in Mr. Stilwell's hands.

STATE INTERFERENCE WITH INTERSTATE COMMISSION.

THE report of the Interstate Commerce Commission in the proceeding brought by the Railroad Commission of Louisiana to secure reductions in the freight rates from Shreveport, La., to points in eastern Texas raises very interesting questions both of law and public policy. The complaint alleged that the interstate rates westward into eastern Texas were too high as compared with the state rates eastward from Dallas to the same territory, and, therefore, were unfairly discriminatory against interstate commerce. The railways showed that the rates from Dallas had been prescribed by the Texas commission in pursuance of a policy of trying to secure a monopoly of Texas markets for Texas shippers, and that if the roads had so adjusted the rates from Shreveport as to put its business men on a parity with those of Dallas the Texas commission probably would have further reduced the rates from Dallas. The testimony also showed that the railway men did not concede that the rates fixed by the Texas commission were reasonable, but accepted them because they feared if they carried them into the courts the Texas commission would find means of punishing them for doing so.

The majority opinion of the Interstate Commerce Commission rendered by Commissioner Lane, and concurred in by Chairman Prouty and Commissioners Clark and Meyer, holds that the adjustment of rates works an unfair discrimination in favor of state and against interstate commerce; condemns the policy of the Texas commission, but holds that the railways knew when they accepted the rates prescribed by the Texas commission that they owed the same duty to interstate as to state commerce; and that, as they accepted the state rates, the interstate commission has the power and duty of compelling them to make proportionate rates on interstate traffic. The roads were, therefore, ordered to reduce the rates from Shreveport. Commissioners Clements, Harlan and McChord vigorously dissented on the ground that by making this order the commission exceeded its lawful powers.

In considering the legality of the commission's order, it should be remembered that the power of Congress and that of the commission over commerce are two entirely different things. Congress derives its power from the commerce clause of the federal constitution, and its authority is so far paramount and exclusive that it may adopt any measure necessary to prevent interference with or burdening of interstate commerce by the states; indeed, the states cannot constitutionally burden or interfere with such commerce, even though they would not by doing so interfere with any regulation adopted by Congress. On the other hand, the Interstate Commerce Commission derives all of its powers from legislation passed by Congress, and any authority this legislation has not expressly or by direct implication conferred has not been conferred at all.

There is no question that the commission is given full power to regulate and prevent unfair discrimination in *interstate* commerce. But where in the law is to be found the provision which expressly or by direct implication authorizes it to regulate and prevent unfair discrimination between interstate and state commerce? There is no such provision. The railways are subject to regulation by both state commissions and the interstate commission. Where is to be found the provision which expressly or by direct implication authorizes the interstate commission to punish railways by reducing their interstate rates for obeying the mandates of state commissions in regard to state rates? There is no such provision. There is, however, a provision which shows clearly that Congress never intended to confer any such power, This is found in the first section, and reads as follows: "Provided, however, that the provisions of this act shall not apply to the transportation of passengers or property, or to the receiving, delivering, storage or handling of property wholly with one state." Commissioner Lane elaborately proves that the federal government has paramount authority over commerce, and then concludes that the Interstate Commerce Commission also has. But there is a hiatus in this reasoning; because Congress has full and paramount authority does not prove at all that it has delegated all of its power to the Interstate Commerce Commission. The very means that the commission adopted to correct the alleged discrimination is a confession, as Commissioner McChord clearly pointed out, that it has not paramount authority. If it had such authority it might correct the discrimination, as Congress might do, by authority, the action of the Texas commission. But the majority do not pretend they may control rates made by state authorities. Why? Because the act gives the commission no power to do so. Mr. Lane says "that when conditions arise which in the fulfillment of its obligation and the due exercise of its granted power to regulate commerce among the states makes such course necessary the national government must assume its constitutional right to lead." And how does it "lead" in this case? Mr. McChord, in his dissenting opinion, very effectively answers this question. He says:

> "The national government therefore leads by following the judgment of the state government, to whom it says: 'We will adopt not only your present scale of rates, but any lower scale you may see fit to establish. Your judgment has been the standard by which we have measured and fixed the maximum rates from Shreveport. If you desire to make lower rates from Shreveport into Texas you may do so by lowering the Texas scale.' Of course, if in this instance we fix interstate rates by the Texas yardstick, we must fix other interstate rates by other state yardsticks, and may find ourselves incumbered with some forty-eight different rate meters, which will doubtless create a condition 'more absurd and unbearable' than that which the majority opines would arise if the states remain unmolested in the exercise of their legitimate powers."

The situation recalls the story of the man who was telling his neighbor about the dog that ran a coyote to death. "What did the dog do with the coyote after the coyote fell dead?" asked the neighbor. "Oh, he didn't do anything. The dog was ahead."

Not only is there nothing in the law, but there is nothing in the discussions in Congress which preceded the enactment of the provisions giving the commission its present power, to indicate that it was intended to give it the authority that it sought to exercise in the Shreveport case. Five out of the seven present members of the commission are lawyers, and it is perhaps not without significance that three of these five dissented from the majority opinion, while the majority opinion was rendered by two lawyers and two laymen.

As already indicated, however, there is involved in this case an important question of public policy as well as an important question of law. Not only does it seem very improbable that the commission has the particular authority which it seeks to exercise, but it ought not to have it. The theory of the majority is that state commissions may, without legal interference by the Interstate Commerce Commission, prescribe state rates, which may actually be unremunerative, and that the Interstate Commerce Commission may then require the railways either to refuse to obey the state commissions and take the state rates into the courts, or to proportionately reduce their interstate rates. On this theory, if a road refuses to obey the mandate of the state commission it may be subjected to reprisals by the state commission; and if it does obey the state commission it will have its interstate rates reduced, even though the result be to make both its state and interstate rates unduly low; the railway is to be "damned if it does and damned if it doesn't." Under such conditions the railways would have to seek refuge in the courts from both the state and interstate commissions. And we suppose that if they did so and the courts decided in their favor, both the state and interstate commissions would denounce the courts for being pro-railway, just as the Interstate Commerce Commission denounced the Commerce Court in its last annual report.

But, while the law probably is not, and certainly ought not to be, what the majority of the commission contend that it is, there

can be no serious question of the need for such construction of existing laws by the courts, or for the enactment of such new legislation, as will give the interstate commission authority to so supervise state regulation as to prevent interference by state authorities with interstate commerce. The facts brought out in the Shreveport case demonstrate conclusively that the Texas commission has for years consistently pursued the policy of so regulating state rates as to compel the carriers to adjust both their state and interstate rates so as to give the shippers of Texas an undue advantage over shippers outside the state in competing for business in Texas. It has consistently tried to erect what amounts to a protective tariff at the Texas border. The same policy has been followed in other states; notably in Iowa. In many cases, also, reductions in state rates have been ordered when the state traffic involved was trifling and the real purpose was to force reductions in interstate rates. The movement of interstate commerce and its regulation by the interstate commission are seriously interfered with by some of the activities of state legislatures and commissions. Commissioner Harlan, in his dissenting opinion, said:

"The power of the federal government to fix maximum rates on state traffic, even when conducted by an interstate carrier, is therefore a matter of no small doubt. Its power to fix minimum rates on state traffic conducted by an interstate carrier, on the general theory that such traffic ought to contribute ratably to the cost of operating a vehicle of interstate commerce in order not to become a burden upon such commerce, seems to me to be more clear. On the same general theory, I think that Congress in aid, or rather in protection, of interstate commerce may forbid discriminations by a railway or other instrument of interstate traffic in favor of state traffic."

Whatever power in the premises Congress has it ought to exercise or delegate to the Interstate Commerce Commission. Under existing law, even on the interpretation put on it by the majority of the Interstate Commerce Commission, the commission cannot both do justice to the railways and protect interstate commerce against improper interference or unfair discrimination; and it ought to be given the necessary power.

NEW BOOKS.

Railroad Operating Costs. By Suffern & Son, New York. Cloth. 8 in. x 12 in. 82 pages. Price, $2.00.

This book consists of a series of original studies of the operating costs of the leading American railways, which should be of great value to railway men and others whose interest or duty impels the making of comparisons on this important phase of railroading. Prior to 1908 it was almost impossible to make any satisfactory comparison of the operating costs of American railways, principally because of the great variety of accounting methods employed. Now that railway accounts have been standardized and are required to be regularly filed with the Interstate Commerce Commission, the author believes that they may be made to serve an exceedingly useful purpose in leading to an increase in efficiency of operation. The studies in the book are based mainly on the railway's annual reports to the commission, amplified by information obtained from the Census bureau and from various railway officers, in respect to earnings, operating expenses, physical characteristics and operating conditions of the representative roads.

Various chapters of the book discuss in detail facts brought out by the examination of the primary accounts and their relations to each other, and some interesting portions of the book contain criticisms of some recent examples of unusually heavy railway expenditures, such as the Pennsylvania's New York terminal improvements, the Virginian Railway and the New York Central-New Haven electrification, on the ground that they have been constructed without sufficient regard to the possibility of adding enough to earnings to pay for their cost.

The author also criticizes some of the generally used units of railway statistics and urges that the statistical publications of the Interstate Commerce Commission be made to include more extensive abstracts of the information received.

Letters to the Editor.

USEFULNESS OF DEMURRAGE ADJUSTERS.

Hartford, Conn., March 18, 1912.

To the Editor of the Railway Age Gazette:

The proposed establishment of government demurrage bureaus, as noticed on the first page of your last issue, is good news, and it is to be hoped that the law will be passed. Commissioner Lane has taken a very lively interest in this subject—rescuing it from obscurity and neglect—and it is no more than right for Congress to give him the formal approval and encouragement implied in this bill.

I say that this is good news, because demurrage is one of those subjects on which we (merchants) need to record our sentiments in order to know that we have any sentiments; or at least in order to know definitely what our interest is. Being usually a matter of secondary importance we either neglect it entirely—and often to our loss—or else make a kick which is ineffectual because we do not go at it in a business-like way. I was glad therefore, to learn also that trade organizations in 37 eastern cities, from Virginia to Maine, have endorsed the Peters bill. At a meeting of shippers and shippers' representatives, in Washington, D. C., recently the bill was also unanimously approved. There were men at that meeting representing the largest shipping interests in the country; from Chicago, St. Louis, Pittsburgh, Youngstown, Detroit, Philadelphia and New England.

Throughout the eastern states, and wherever the demurrage bureaus have been abandoned, there is a growing discontent in the public mind over the fact that all appeals for adjustment of small but vexatious demurrage penalties must now be made to the railway company which is interested in collecting the charges.

In the south, where all the railways have hung together in demurrage bureaus, and have, to all intents and purposes, turned the bureaus over to their managers with a free hand to supervise the uniform application of the rules under uniform interpretations, approved by the Interstate Commerce Commission, I am informed that there is peace in demurrage matters. In one city, Louisville, I am sure this is true. The bureau there, under the direction of Mr. Loomis, has held an even hand consistently for 20 years. In the north, where the railways have put this penalty-inflicting business, requiring the most delicate diplomacy, into the hands of men who treat it as an adjunct to their principal business of looking after car interchange between railways, there is, as I have said, a growing discontent. One representative of a large iron manufacturer, at the meeting in Washington just referred to, rather bitterly argued that, no matter what changes in the rules may be agreed upon, business men must insist as a *sine qua non* that the railways shall not interpret for themselves the meaning of the rules or the manner of their application. It is in the manner of the application of the rules that discriminatory results appear. That is, the railway car department men may meet ever so often and solemnly agree upon uniform interpretations of the rules, and yet they will go home and apply the rules, or withhold their application, in a way to result in flagrant discrimination.

Some railways were notoriously dishonest in the application of the rules while under the supervision of the demurrage bureaus, and even continued this after the law was amended, in 1906, as proved by prosecutions of record. Is it at all probable that these roads will be honest under the more remote supervision of the Interstate Commerce Commission, and under the same law? As a matter of fact, the roads cannot all agree upon questions of interpretation, to say nothing about questions of application. In short, where there is competition it is very difficult to prove such differences purposeful violations of

the law. Where there is no competition there is an arbitrary, brusque, sometimes discourteous refusal to satisfactorily adjust demurrage claims.

In competitive territory the differences in application of rules slowly, but surely, make for discontent. In non-competitive territory the undiplomatic handling of demurrage claims by railway men interested in the revenue involved causes immediate and fiery protest.

If the railways had been wisely directed they would have, promptly upon the passage of the Hepburn Act, publicly turned over the demurrage bureau organizations to the supervision and direction of the Interstate Commerce Commission. To an outsider it looks as though they ought to be glad of an opportunity thus to relieve themselves of the odium arising from the enforcement of a police measure. C. H. M.

THE CAR INSPECTOR'S IMPORTANT DUTIES.

WILMINGTON, Del., Feb. 5, 1912.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In your editorial of February 2 you say that the right handling of cars depends on the right spirit in the minds of not only the superintendents and despatchers, but also the conductors and yard masters, and even the brakemen, firemen and "car knockers."

To the latter class I belong, having spent the last twenty-five years of my life in the inspection department in a large classification yard; and I have been trained to be just, not only to the company by which we are employed, but to apply the same rule to all foreign equipment. But I seriously object to the term "car knocker," which you have used on more than one occasion. To my mind it implies contempt for the calling of a car inspector. While we admit that we are not such an important unit as some other railway employees and that we are considered by many simply a necessary evil, yet we are one of the necessary links in the chain of railway progress. By our discovery of defective parts and remedying the same, we are the means of preventing accidents to the equipment, to railway employees and to the traveling public, and we feel that our calling is just as honorable as any other in the railway service.

Our duties compel us to be familiar with the rules for interchange of cars at junction points, and the loading rules, each of which is revised yearly. Some of these would puzzle a lawyer to interpretate, yet a "car knocker" is expected to know their proper meaning. The Federal Safety Appliances Laws have got to be memorized and a car inspector has to know at a glance whether a car is properly equipped, and whether the old law applies or the new one (in effect July 1, 1911). In addition we have to know whether the dimensions of cars or of open loads exceed the clearance dimensions of the tunnels, bridges, stations and platforms, as well as keep a close scrutiny of all parts of cars for defective parts. We must either repair them on the spot or send them to the shops for heavier repairs. We must also familiarize ourselves with the operation of the air brakes, and their diseases, and put them in order whenever possible.

The higher officers of the maintenance of car equipment largely depend on the car inspector and the freight repair yard for knowledge of the causes of failures of the rolling stock, and base many of their improvements on that knowledge.

We are worked long hours, generally twelve per day or night, almost every day in the year; and we have little leisure to improve our intellect or get recreation for our bodies.

The danger of loss of life is as great in our work as among trainmen, and the compensation is about 30 per cent. less; while the amount of knowledge in the way of rules and instructions that we have to familiarize ourselves with is about 200 per cent. more. It takes about five years to educate a dependable car inspector and for a brakeman about one month. Whatever a brakeman thinks he should not do, he manages to have unloaded upon the car inspector. If a car or train gets derailed or wrecked, our duties are to investigate and discover the cause, if possible.

With this information before you, Mr. Editor, I trust that you will not use the term "car knocker" in the future.

A REGULAR READER.

[The editor regrets to have offended "A Regular Reader," and assures him that there was no intention of "knocking" any reader, either regular or occasional; or any railway man, high or low. In making a journey between New York and Wilmington, a passenger generally passes or meets about one or two thousand freight cars, most of them moving at from 15 to 40 miles an hour; and if he has any notion of the construction of freight cars, and of the ease with which a derailed freight car could block his path, he signalizes the safe conclusion of his journey by a mental resolve that in his prayers that night the car inspector shall have prominent mention. The car inspector need have no fear that thoughtful and well informed passengers will forget him.]

LABOR'S CO-OPERATION WITH RAILWAY MANAGEMENT.

FRESNO, Cal., February 24, 1912.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In an editorial published in the *Railway Age Gazette* of February 2, 1912, dealing with co-operation between the managements and employees of the railways of the United States, your paper has touched the dominant chord. In fact, it is a matter of vital importance to both sides.

The day has passed when employer and employee are lined up in battle array against one and another. While there are a few more piers to be placed in the chasm that separated the two, it is fast being bridged, and let us hope that the day is not far distant when employee and employer will work hand in hand for the betterment of railway conditions.

The railway employees of today are not the men of yesterday. In fact the major part of them are of families, men whose ambitions are to have homes of their own, be good citizens, and to know that they are not going to be dismissed from the service of the company for some small infraction of the company's rules, but who still realize the vital importance of discipline.

We are all working for one great cause, that is, betterment of conditions, and that can never be accomplished by working on different lines.

It is a fact that petty politicians have ridden into office on the slogan, "Down with the railways," and looked to the employee to assist in boosting them into office. What is the result? Both employees and railways received a beautiful "swat" in the jaw, and the political parasite reaps a rich harvest.

Speaking from the ranks, the employee, by a little personal application, could work wonders in reducing some of the hysterical legislation that is sweeping over the country, and be loyal to his brotherhood, also.

It is no disgrace to support a man at the polls that you know will be fair to a railway company and our organizations also. If the railways are allowed to make a fair return on the money invested, there is no doubt but what we could get our share of the returns.

In my dealing with legislative matters, I always found that I could deal squarely with the organization which I represented and not club the company, either. There were many measures that were introduced in the California legislature, which would be of no benefit to employer or employee, but an actual detriment to both; notably, a measure that was introduced by the representative of some lumber jacks in the northern part of the state. It appears that some small lumber corporation deducted fees from the pay of the men for medical attention which they never received. A bill went to the house to prohibit the deducting of hospital fees from the wages of any working man in the state, which, if he had not been successful in defeating it, the railway employees would have been the ones to suffer from.

We co-operated successfully regarding that and a few other insane measures that would have been a burden to the railways and the men also.

Co-operation is a matter to which I have given careful thought, and I find that a word and a deed at the right time and place will have more effect than some silver tongued orator would have by shouting his head off for a week.

I am speaking of a co-operation from the employee's standpoint, and am trying to show where it is the duty of the employee to work to the interest of the company. I have found in the past that the company will work towards the same ends in behalf of the employee.

It is a fact that at times too severe discipline is meted out to an employee by some local official. The seed of discontent is sown. If the sentence is just it will probably end there. If it is unjust, we all know that the news spreads like wild fire. While it may appear insignificant at the time, it may later result in strained relations between the men and company.

However, when in my case discipline was dealt out to me, it was always just, and I merited the sentence. In fact, in the fourteen years of my service with the great Santa Fe system, I have always found the management willing to adjust any just case, and generally willing to give the men the benefit of the doubt.

I am not going to put all the responsibility of co-operation on one side, for there are always two sides to every question, and both sides should be met on lines that are fair and square. The officials should offer encouragement to truthfulness and honesty, letting an employee know that his truthfulness is appreciated. When a man has made a mistake, and he knows that the truth will bear weight, and he will not be as severely punished as if he tried to cover it up, it will encourage him to make honest reports.

If he is punished just as severely for the offense, whether he is honest or not, he is offered no encouragement to be honest in future cases, and he will try to worm out by covering up the facts.

It is not my intention to drift off the subject, and go into regarding measures of discipline, but we all know that this is one of the factors of co-operation.

The public today is exacting more from the railways in the way of transportation facilities than was ever demanded before. The companies, on the other hand, have to demand first-class service from the men. In no other class of service is a man held up before the public eye more than is a railway employee, and it is nothing more than right that he furnish the first-class service that is essential to first-class railroading. We find the screws being drawn tighter, and some relief must be afforded. The only logical solution offered is that suggested by the *Railway Age Gazette*—co-operation in fact; to use that much heralded motto of the *Santa Fe Employees' Magazine*, "team work."

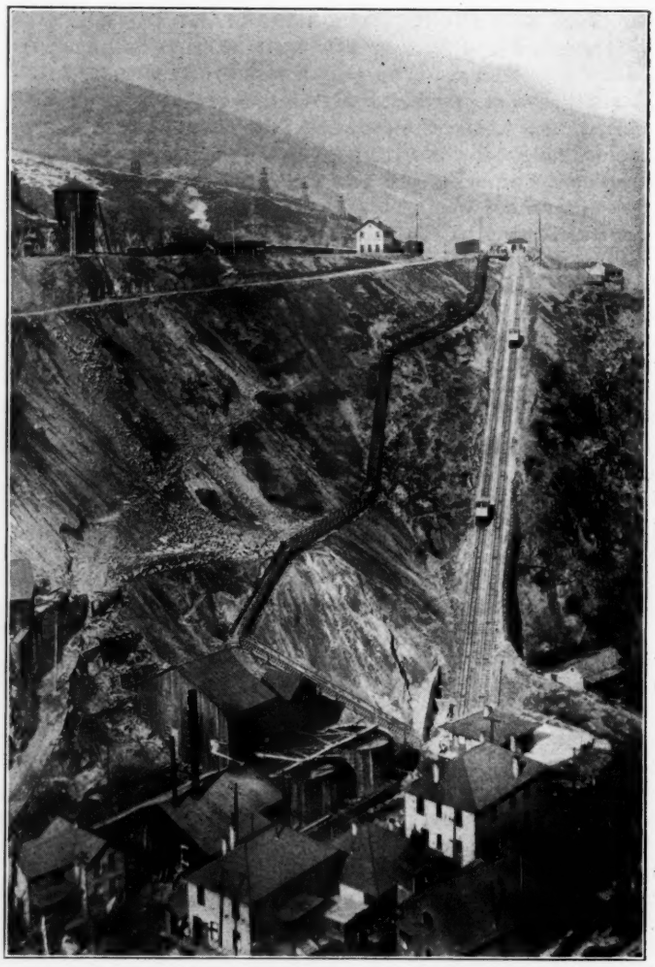
L. H. COLLETT,
Locomotive Engineer, A. T. & S. F.

The Yemen railway, which is to be built by a French company from the Turkish port of Hodeida to Sanaa, the capital of Yemen and which later on will be extended to Mecca, where it will make connection with the Hedjas railway, is of especial importance as it will be the first line which will connect the Red sea with central Arabia. This line is also very important for Turkey, as it offers the possibility of vigorous action against the continual uprising of the Arabs. Sanaa is the middle point of a strip of very fertile country about 60 miles wide along the edge of the Arabian plateau bordering on the Great Salt desert. This plateau, which rises gently from the northwest, reaches its greatest altitude, about 9,200 ft. in Yemen, and then falls gradually towards the South and East. The construction of the line will take five or six years, as the section lying in the mountainous district offers difficulties of construction. To prevent attacks by the natives, it will be guarded by soldiers even after completion.

CONSTRUCTION OF THE BINGHAM & GARFIELD.

The Bingham & Garfield extends from a connection with the San Pedro, Los Angeles & Salt Lake at Garfield, Utah, up through Bingham Canyon to the town of Bingham, a distance of 20 miles. The road was built primarily to transport ore from the Utah Copper Company's mine at Bingham to the company's concentrating plants at Garfield, but, in addition to this ore traffic it handles a general passenger and freight business between the numerous mines at Bingham and the mills and smelters around Garfield and Salt Lake City.

The distance from Garfield to Salt Lake City via the San Pedro, Los Angeles & Salt Lake is 15 miles, traffic on the Bingham & Garfield being turned over to the latter road at Garfield. The building of the line involved unusual engineering features, as the country is extremely mountainous. The line is approximately 10 miles shorter than any previous connection between Garfield and the mines at Bingham, materially reducing the cost of transportation on the ore.



Inclined Railway in Town of Bingham.

Bingham Canyon at the upper terminal of the road is 13 miles in a direct line from Garfield, and is 1,875 ft. higher than the lower terminal of the line. Location work on the road was started at both ends, the controlling point being Harker's Ridge, a long, flat ridge approximately half way between the terminal points. It was found that a 2½ per cent. grade from Garfield would enter a saddle in this ridge very nicely, and surveys from the other end showed that a maximum 2½ per cent. grade would meet this line very satisfactorily. On account of the mountainous character of the country at the upper end it was very difficult to develop terminal facilities. Surveys showed that storage tracks with a capacity of 40 cars could be ob-

tained, which was finally considered satisfactory, on the assurance of locomotive builders that Mallet locomotives could be furnished that would handle 40 cars up a 2½ per cent. grade at 12 miles an hour. The maximum grade was, therefore, fixed at 2½ per cent. There is approximately 14 miles of the maximum grade on the line, the average for the entire line being 2 per cent. All grades are compensated .04 per deg. for curvature and are materially reduced at sidings and through tunnels. The line is continuously rising from Garfield to Bingham, there being no adverse grade against northbound traffic. There are two 10-deg. curves at Dry Fork, but with this exception the maximum curvature is 8 deg., the majority being 6 deg. The first 10-mile section below Bingham is through a very precipitous country, construction on the first three miles

Town of Bingham, Utah, Showing Mining Operations and Carr Fork Viaduct, under Construction, on the Bingham & Garfield.

of which was particularly difficult on account of the deep canyons that had to be bridged and the steep ridges that had to be tunneled. The cost of these three miles was about $1,170,000, and that of the first mile $592,250. This was the most expensive section of the line, including Carr Fork and Markham Gulch bridges, the Bingham yards and a 1,280-ft. tunnel. Tunneling at the upper end of the line above the town of Bingham was made necessary by the fact that if the line had been benched in the face of the almost vertical wall, construction work would have endangered the lives of the inhabitants in the town below, and the amount of curvature would have been materially increased.

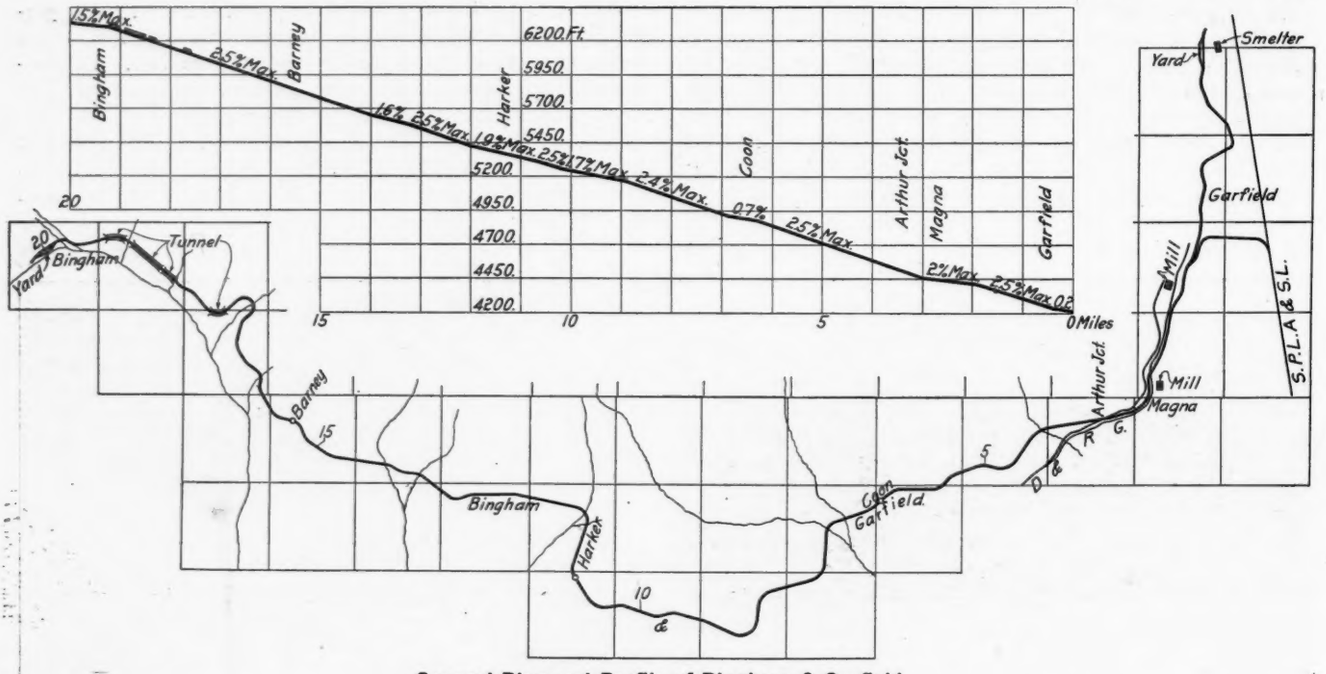
Six steam shovels and over 1,000 men were employed in grading the road. As a large part of the excavation was in very deep and short cuts which could be reached only with great difficulty by steam shovels and which were not economical to handle with teams, the method commonly known as "Swede trapping" was employed. This method consists of driving a small drift slightly below subgrade and large enough to accommodate a track and a small dump car, the drift being provided with trap doors on the top through which materials blasted down from above can be dropped into cars. This obviates the necessity for shoveling most of the material. The total excavation amounted to 1,780,000 cu. yds.

The tunneling on the line totaled 4,795 ft., divided into four tunnels, respectively 1,280 ft., 2,079 ft., 754 ft. and 682 ft. long. These tunnels are 18 ft. wide and 22 ft. high above the top of rail. In order to economize labor and make more rapid progress in driving a frame structure known as a "Jumbo" was used. This structure was supported on running rails and was moved forward as the work progressed, allowing the excavation to be handled in three benches. From the top story outriggers were run to the top bench, on which material was wheeled out to be deposited in a bin or directly into cars. The second bench was handled in the same way from the second story of the Jumbo, the lower bench being shoveled directly into the cars. Drilling was all done with air drills, compressors being located about one mile from the work. The average progress in driving the tunnels was 5 ft. per heading per 24 hours. The rock encountered was principally quartzite, which shattered easily, making it necessary to support more than half of the tunnel length. The timbering was of Oregon fir, consisting of 12-in. x 12-in. posts and three-segment arch rings. The lagging was of 4 in. x 6 in. timber. After the completion of the

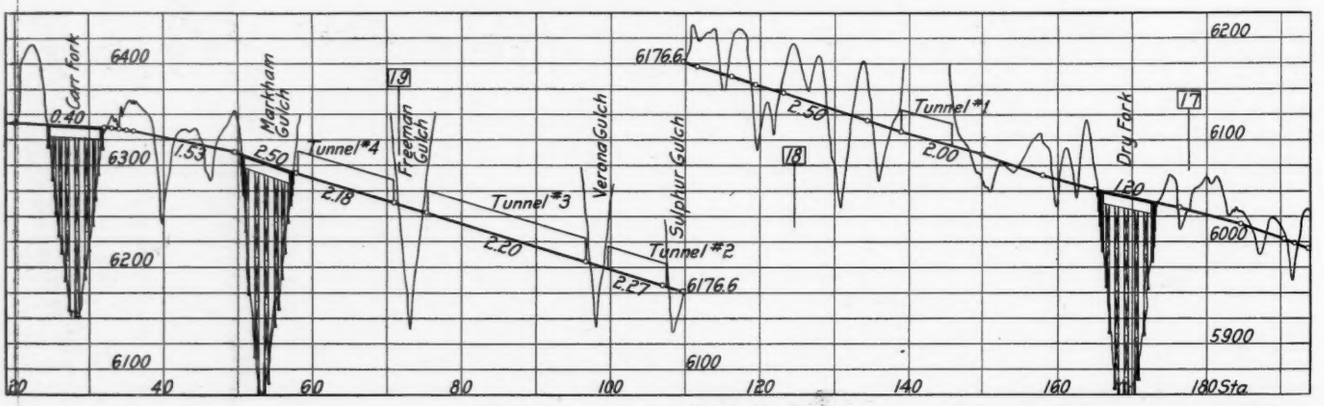
tunnels a tunnel sectioner, shown in one of the accompanying cuts, was used to determine the exact volume of rock moved and to provide a permanent record of the sectional outline.

There are three steel viaducts in Bingham Canyon, one 690 ft. long and 190 ft. high, one 640 ft. long and 225 ft. high, and one 670 ft. long and 188 ft. high. The concrete foundations under all these viaducts were carried down to solid rock, and the depth below the surface which was required to reach rock was 57 ft., 38 ft. and 95 ft., respectively, for the three structures.

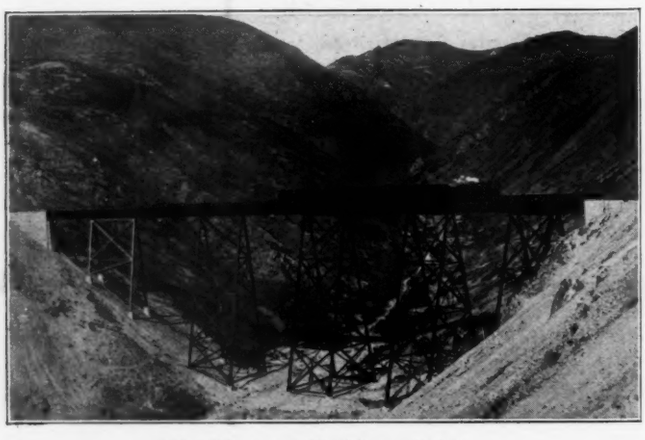
The drainage along the mountainous part of the road was a serious problem. Concrete arches, varying in span from 3 ft. to 10 ft., were standard for drainage openings, but it was difficult at some points to locate these arches in such a way that their foundations could be economically excavated when the length of the arch was made as short as possible. It was found that at some points the building of such drainage culverts



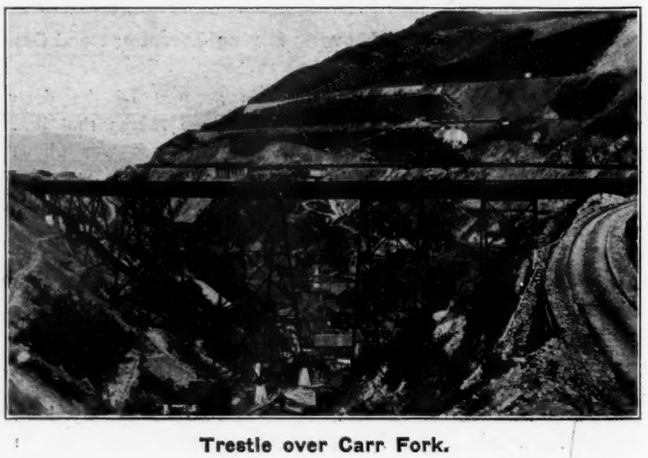
General Plan and Profile of Bingham & Garfield.



Profile of Upper Section of the Line.



Trestle over Markham Gulch.

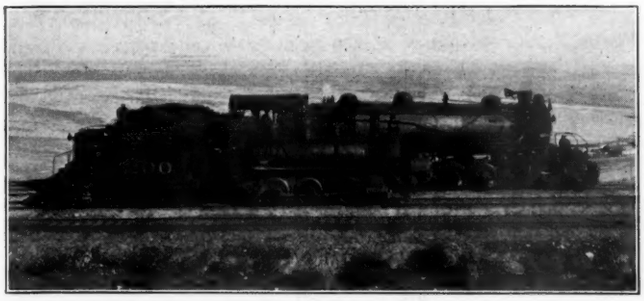


Trestle over Carr Fork.

would prevent the immediate starting of grading, so it was decided to drive tunnels through the original ground to provide proper drainage and allow the filling of the gulches to proceed without delay. To provide these openings 1,400 lineal feet of drain tunnel was built. The concrete work on the line totaled 12,000 cu. yds.

The track is built to Harriman Lines main line standard. The main line is laid with 90-lb. A. R. A. rails and sidings and branches with 65-lb. rails. Flat bottom tieplates, boltless rail anchors and 4-hole continuous joints, are used on the main line.

The operation of the company's copper mines is an interesting problem in railway construction and operation. The ore lies in a deposit which is covered to a depth of 40 ft. to 200 ft. The operations extend over a difference in elevation of 1,500 ft. This working surface is divided into benches not exceeding 75 ft. in height, which are operated by steam shovels. The



Mallet and Switching Locomotive Used on Bingham & Garfield.

ore body lies in folds near the surface so that in removing the capping or overburden there are times when thousands of tons of ore are uncovered, and facilities must be provided for loading it as fast as the steam shovel can handle it. The railway tracks in the mines are laid on 4 per cent. compensated grades with 16 deg. maximum curvature. Small saddle tank locomotives, handling 240 tons of ore at a rate of 10 miles an hour, are used on these lines. This railway system connects all levels in the mine so that coal and other supplies can be delivered to each steam shovel and ore removed from any level as fast as it is encountered. The equipment used in this service consists of 25 steam shovels, 53 locomotives, 408 cars, with which approximately three-fourths of a million yards of material a month is moved.

The ore service on the Bingham & Garfield is operated

One of the Tunnels, Showing Rock Formation.

with Mallet articulated compound locomotives and all-steel ore cars. The locomotives have a weight of 625,000 lbs., including the tender, 457,000 lbs. being on the 16 driving wheels. The maximum tractive power is 105,500 lbs. The over-all length of the engine and tender is 90 ft. 6 in., with a driving wheel base of 14 ft. 9 in., allowing the locomotives to take the curves more easily and damage the track less than the heavy types of consolidated locomotives. The cars are especially designed to handle this ore, and have a capacity of 60 tons with 10 per cent. excess allowance for overload. They are of the hopper-bottom type, dumping the load quickly and cleanly at the mills.

The building of this line was under the direction of H. C. Goodrich, chief engineer. The concrete work was handled by the Utah Construction Company. Steel for the bridges was furnished by the Minneapolis Steel & Machinery Company, and erected by Gerrick & Gerrick.

THE I. C. C. CLAIMS JURISDICTION OVER STATE RATES.*

J. J. Meredith, Shelby Taylor and Henry B. Schreiber, constituting the Railroad Commission of Louisiana v. St. Louis Southwestern et al. Opinion by Commissioner Lane:

This proceeding places in issue the right of interstate carriers to discriminate in favor of state traffic and aginst interstate traffic. A rate of 60 cents carries first class traffic eastward from Dallas, Tex., 160 miles, while the same rate carries the same class of traffic but 55 miles from Shreveport, La., into Texas. The railway commission of Louisiana, under direction of the legislature, brought this case to secure an adjustment of rates that would be reasonable from Shreveport into Texas and to end the unjust discrimination in favor of Texas state traffic against traffic from Louisiana into Texas. The defense is mainly that the railways are compelled by the Texas commission to effect the discrimination here involved.

In a letter signed by the chairman of the Texas commission and addressed to the secretary of the Progressive League, Marshall, Tex., the Texas commission expresses the opinion that it would be very much against the interests of the Texas jobber, "whom it has been the endeavor of this commission to protect," to have the rates from Shreveport to Texas points reduced. The letter points out that carload rates to Texas jobbing points are higher than to Shreveport, and the high local rate from Shreveport about equalizes Shreveport and Texas jobbing points on through business. The I. C. C. finds that it was not the prime desire of the Texas commission that rates within the state should be low, but rather that the interstate roads should not make rates so low on commodities which Texas could supply to herself as could hinder the growth of her cities as manufacturing and distributing cities. If interstate carriers were determined on a long haul policy which tended to make the people of Texas depend on merchants in other states, the Texas commission frankly declared that it would meet this policy in such a way as to save the interests of Texas. The general freight agent of one of the roads interested in the question of granting concentration rates on cotton at Shreveport wrote as follows:

The Honorable Railroad Commission of Texas,
Austin, Tex.

Gentlemen: We have received requests from cotton men along our line south of Shreveport, also on the Texas & Gulf, and Timpson & Henderson, also merchants at Shreveport, for the establishment of a concentrating privilege at Shreveport on cotton from the points indicated.

We have hesitated so far to establish any such privilege, feeling that it might not meet with the entire approval of the railway commission of Texas. However, we are advised that such privilege would give a better market for cotton to the producers along

*The opinion herewith is an abstract, but, insofar as possible, the commission's language has been preserved.

the lines indicated, and as such would be an advantage to the Texas farmer.

Under the circumstances, if you will advise us that you do not disapprove of the plans, we will take steps to see if we cannot meet the views of our cotton friends in regard to this feature.

Yours truly,

J. R. CHRISTIAN, G. F. A.

To this letter the chairman of the Texas commission replied that "the establishment of such an arrangement would not meet with the approval of this commission."

The petition of the complainants is that the I. C. C. established the same basis of rates between Shreveport and east Texas points as are given to Texas competitors of Shreveport interests for the same distances.

The rates fixed by a state commission are not prescribed as a standard, by the act of Congress, governing interstate rates. The Texas rates as such; therefore, the commission may not prescribe. If, however, they stand a test of reasonableness they may be adopted. The I. C. C. can comply with the petition only if power has been granted it under the first, third and fifteenth sections of the act to regulate commerce. Under the third section discrimination is prohibited.

In this case the rates adopted by interstate carriers on state traffic are not adopted on interstate traffic. Thus arises a discrimination in favor of communities within the state, and interstate commerce suffers a corresponding disadvantage. May this commisison end such discrimination by saying to the interstate carrier: "You may not distinguish between state and interstate traffic transported under similar conditions. If the rates prescribed for you by state authority are not compensatory on this specific traffic as to which discrimination is found the burden rests on you, irrespective of your obligation to the state, to so adjust your rates that justice will be done between communities, regardless of the invisible state line which divides them." To which we are compelled to answer that the effective exercise of its power regarding interstate commerce makes necessary the assertion of the supreme authority of the national government and that Congress has appropriately exercised this power in the provisions of the act to regulate commerce touching discrimination. The power of Congress is unquestioned to control all such carriers as do not exclude themselves from participating in interstate traffic. The defendants themselves may not give unreasonable preference to any locality whatsoever or to subject any locality to unreasonable disadvantage in any respect whatsoever. The only reasonable reading in the law is one which credits Congress with the intention of stopping all undue discrimination by interstate carriers. The orders of a state commission enforcing a discrimination against interstate commerce are not acceptable under the law. [The commission quotes Justice White in the Pullman case, Justice McKenna in the Oklahoma v. Kansas Natural Gas case, and Justice Van Devanter in the Safety Appliance case.]

It is said that the carriers within the state of Texas are protected from the provisions of the act to regulate commerce by the clause in the first section reading:

Provided, however, that the provisions of this act shall not apply to the transportation of passengers or property, or to the receiving, delivering, storage or handling of property wholly within one state and not shipped to or from a foreign country from or to any state or territory as aforesaid.

This language was intended as a recognition of the fact that Congress by this act was not assuming to regulate transportation entirely within the borders of a state. It does not by the broadest construction justify the inference that an interstate carrier may pursue a policy of rate making within a state that would affect unlawfully commerce among the states. It is not merely commerce which is confined to a single state which is state commerce, but that which "does not affect other states." To say that this prohibition permits carriers to exclude a city within the state of Louisiana from doing business on equal terms with the cities in Texas is to distort the plain meaning of the act and to make the regulation of interstate commerce farcically ineffective. To say that the interstate carrier may so discriminate because of the orders of a state commission is to admit that a state may limit and prescribe the flow of commerce between the states.

How utterly incongruous the result if the interstate carriers of Ohio should be allowed to make rates within that state which would so confine the commerce of its communities as to exclude on equal terms that of Buffalo or of Pittsburgh. An interstate carrier must respect the federal law, and if it is also subject to state law it must respect that insofar as it can without doing violence to its obligation under the national authority. The defendants undeniably discriminate directly against interstate traffic and plead that they were obeying the orders of a state commission against which they were helpless. They appealed to no court for relief, nor to this commission. The class rates of the Texas commission within the distances here involved are not too low. This the carriers themselves do not urge. To the suggestion that the exercise of the commission's power to do away with discrimination effected by the adjustment of state and interstate rates must lead to conflict in which the jurisdiction of one sovereignty or the other must give way, the answer is that when conditions arise in the fulfillment of the commission's obligation and the exercise of granted power, the national government must assume its constitutional right to lead.

The railways are therefore ordered to put in a prescribed schedule of rates from Shreveport to Texas points, and are ordered to maintain no higher rates than those prescribed and to equalize the terms and conditions on which they will extend transportation of a similar character moving into Texas from Shreveport with that moving wholly within Texas. But in effecting such equalization the class scale of rates prescribed herewith shall not be exceeded. Whatever is the practice respecting the concentration of cotton within Texas, the road shall be ordered to apply at Shreveport.

Chairman Prouty concurring:

I entirely agree with the conclusion reached in the majority opinion. While this commission cannot establish and should not attempt to establish, directly or indirectly, a state rate, it must in the exercise of the duty put on it by the act to regulate commerce, determine whether discrimination exists, and in doing that it may and should examine the state rate in comparison with the interstate rate. I think that the Andy's Ridge Coal Company v. Southern Pacific, 18 I. C. C., 405, was wrongly decided and should be overruled. The third section declares that no carrier subject to the act shall be guilty of undue preference, and lays on this commission the duty of removing such preference when found. Such an authority must manifestly be exercised by some one, nor is its exercise antagonistic to the interest of state shippers.

Commissioner Clark concurring:

Under the constitution a state may not levy any tax or impost on commerce from another state. A transportation rate that is subject to regulation by a body created by law for that purpose is in essence a tax on traffic. A state may not obstruct a navigable waterway without the consent of the federal government, and it is no answer to say that it has opened another stream or channel in lieu of the one so obstructed. Whether or not Congress has exercised its jurisdiction in these premises, and whether or not it has delegated to us power to remove such discriminations and preferences, are questions which apparently can never be settled until they have been passed on by the court that is empowered to speak the last word.

Commissioner Clements dissenting:

The act to regulate commerce at once confers and specifically limits the powers of the commission intended by Congress to be exercised by it for the correction of wrongs against which the

act was aimed. It is not a question of what additional powers Congress could or ought to invest in the commission, but has it conferred the power here sought to be exercised? The clause in section one quoted in the majority opinion limits the effect of the commission's orders. When a condition arises which presents wrongs which cannot be corrected without additional authority, the commission should ask for additional legislation and should not read section three of the act independently of the restrictive proviso of section one. The commission is not justified, in my judgment, in undertaking by interpretation to read out of the act an important provision in order to meet the situation which can be reached only by additional legislation. The quotations in the majority case relate largely not to the authority given the commission, but to the authority of Congress itself under the constitution.

Commissioner Harlan dissenting:

The result of the ruling of the majority when analyzed seems to be that in fixing a rate on interstate traffic of a carrier we thereby impose on it and on the lawfully constituted state authorities a standard to which both must adjust their views as to what is a reasonable rate on purely state traffic. The exercise by this commission of a power that so modifies the control of state commissions over state rates that it requires a carrier either to put itself in an attitude of disobedience to an order of a state commission respecting a state tariff, or to accept less than a reasonable compensation on its interstate traffic manifestly ought to rest on some clear and definite declaration of that policy by Congress. It rests on an insecure and wholly unsatisfactory foundation for administrative purposes when it flows from a process of reasoning that is admittedly mere construction. This is particularly true when it is announced by a quasi-judicial tribunal that has no general jurisdiction, only such special and limited powers as are defined in the act creating it. In my judgment the language of the proviso of section one admits of no other reasonable construction than that Congress intended expressly to withhold from this commission the right, directly or indirectly, to exercise its powers with respect to state commerce or to enforce on such traffic any of the provisions of the act.

Commissioner McChord dissenting:

In dissenting from the opinion of the majority, it is not my purpose to discuss the relative powers of the state and national governments, for that would presuppose a conflict between federal and state authority, which conflict I do not concede here exists. Neither is it my purpose to argue the extent of the powers of the Congress under the constitution, but rather to confine myself to the powers which the Congress has delegated to this commission.

The report finds that the rates out of Shreveport, La., into eastern Texas discriminate against Shreveport in favor of Texas jobbers. Conceding, for the purpose of argument, that the rates from Dallas to eastern Texas discriminate in favor of Dallas as compared with the rates from Shreveport into eastern Texas, the first question that arises is: Is the discrimination voluntary? In all the reports of this commission dealing with the question of discrimination we have invariably inquired into the reason for the discrimination, to determine whether or not the same was undue, and where we have found the situation to be one over which the carrier defendant has no control we have held that the carrier was not responsible for the discrimination.

In my opinion, the charging of lower rates to a common territory for intrastate than for interstate traffic, at least where the intrastate rates are compelled, does not constitute undue discriminations. But suppose it did. Has this commission power to correct it?

I do not hesitate to subscribe to the theory that where intrastate commerce or anything else places a direct burden and obstruction upon interstate commerce the obstruction can be removed. In deputizing this commission to correct unreasonable and discriminatory transportation charges and practices for the interstate transportation of passengers and property as defined by the act, Congress specifically excluded from our jurisdiction that transportation which lay wholly within one state. The phrase "wholly within one state" is qualified only by "and not shipped to or from a foreign country from or to any state or territory as aforesaid." As we look to the act of Congress rather than to the constitution for our powers and duties, it is useless to discuss the constitutional power of Congress under the commerce clause. In my opinion, the majority report is in effect legislation which the Congress has expressly refused to enact.

The Congress is able completely to regulate interstate transportation without the exercise of any control over transportation which lies wholly within a state; so, also, is this commission, by the proper exercise of the powers which have been conferred. If the alleged preferential intrastate rates are reasonable, and if the transportation conditions from the interstate point to the common territory are similar, it follows that the interstate rates must be too high and should be reduced. But this is not because of discrimination; rather because of inherent unreasonableness.

Much of the opinion is devoted to a discussion of the supremacy of federal over state control. To my mind, a conclusion both erroneous and unnecessary is reached, and as it is unnecessary I would not further refer to it except for the great length with which the matter has been dealt and my unwillingness to subscribe to the views therein announced. The quotation from the *Pullman case,* 216 U. S., 65, is unassailable, but it should be remembered that in that case the state of Kansas attempted to impose a tax upon all of the property, both interstate and intrastate, of the Pullman Company. The excerpt from *Oklahoma* v. *Kansas Natural Gas Co.,* 221 U. S., 261, is quoted from *Haskell* v. *Cowham,* 187 Fed., 409, and was directed at the action of the state of Oklahoma in refusing to allow natural gas mined therein to be transported by pipe lines out of the state, a situation in no wise analogous to that here presented. The decision in the *Safety Appliance case,* 220 U. S., 27, has absolutely no application to the present case. There it was in effect held that cars and locomotives are instrumentalities and vehicles of commerce moving over an interstate highway and that their proper and safe equipment was necessary to insure the transportation of interstate commerce.

To the suggestion that the exercise of the power to end discrimination between rates within a state and rates to interstate points must lead to conflict in which the jurisdiction of one sovereignty or the other must give way, the majority answers "That when conditions arise which, in the fulfillment of its obligations and the due exercise of its granted power to regulate commerce among the states, make such course necessary, the national government must assume its constitutional right to lead." Let us see whether by the finding of the majority the national government really leads. The rates prescribed as maxima to apply from Shreveport are virtually the Texas commission rates that are in effect in Texas. Subject to these maxima, Shreveport is ordered kept on a parity with Houston and Dallas, leaving it then within the power of the Texas commission to further reduce the Shreveport rates by a reduction in the present Texas scale. The national government therefore *leads* by *following* the judgment of the state government, to whom it says: "We will adopt not only your present scale of rates, but any lower scale you may see fit to establish. Your judgment has been the standard by which we have measured and fixed the maximum rates from Shreveport. If you desire to make lower rates from Shreveport into Texas you may do so by lowering the Texas scale." Of course, if in this instance we fix interstate rates by the Texas yardstick, we must fix other interstate rates by other state yardsticks, and may find ourselves incumbered with some forty-eight different rate meters, which will doubtless create a condition "more absurd and unbearable" than that which the majority opines would arise if the states remain unmolested in the exercise of their legitimate powers. But, aside from this

chaos, the Supreme Court has said that the function which the majority would delegate to the state of Texas can not by a state be constitutionally exercised, because:

The fact which vitiates the provision is that it compels the carrier to regulate, adjust, or fix his interstate rates with some reference at least to his rates within the state. [*L. & N. R. R. Co.* v. *Eubank*, 184 U. S., 41.]

To prevent the conflict between sovereignties which the majority has unnecessarily and by no means conclusively discovered and attempted to remove, the Congress has wisely declared:

That the provisions of this act shall not apply to the transportation of passengers or property, or to the receiving, delivering, storage, or handling of property wholly within one state and not shipped to or from a foreign country from or to any state or territory as aforesaid.

The majority endeavors to interpret this provision by explaining what it does not mean, but I submit that if it were not intended to cover instances of the kind with which we are here dealing its incorporation in the act to regulate commerce was wanton and unnecessary.

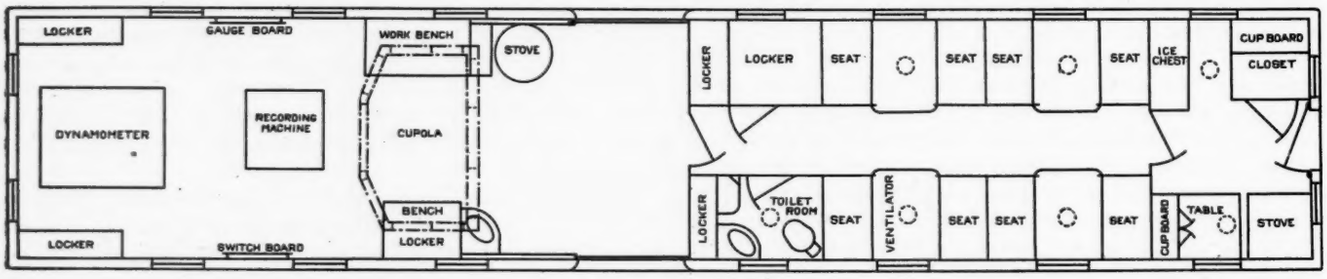
My position is that this commission should confine itself within the four corners of the law of its creation, usurping neither the legislative function of the Congress nor the judicial power of the courts.

The governor of Para has signed a bill passed by the Brazilian Congress for the construction of railway lines in the valleys of the Gurupy, Tocantins, Aragura, Xingu and Tapajos rivers.

SANTA FE DYNAMOMETER CAR.

BY H. B. MAC FARLAND,
Engineer of Tests, Topeka, Kan.

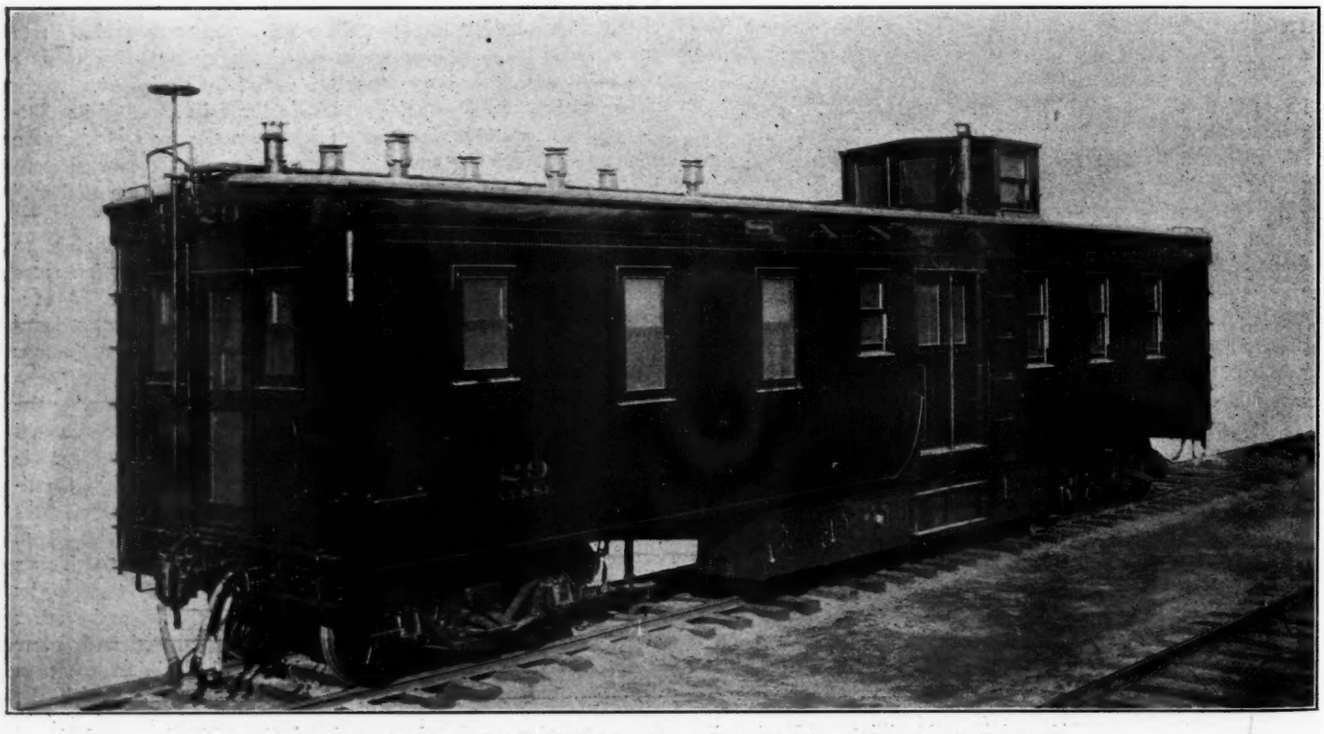
An exceptionally high capacity dynamometer car, 1,000,000 lbs., having a steel frame for the superstructure, has just been placed in service on the Atchison, Topeka & Santa Fe. The dynamometer was built by the Locomotive Finished Material Company, Atchison, Kan., and the recording apparatus by the Burr Machine Company, Champaign, Ill., from drawings furnished by the railway. The steel frame for the car was built by the Crawford Locomotive Works at Streator, Ill. The car was finished and the apparatus installed at the Topeka shops. The under-



Floor Plan of the Santa Fe Dynamometer Car.

frame, side and roof frame are entirely of steel, the underframe being composed of a built-up box girder for the center sill, channels for the intermediate sills, and Z-bars for the side sills. The side frame is of angles and the roof frame of I-beams.

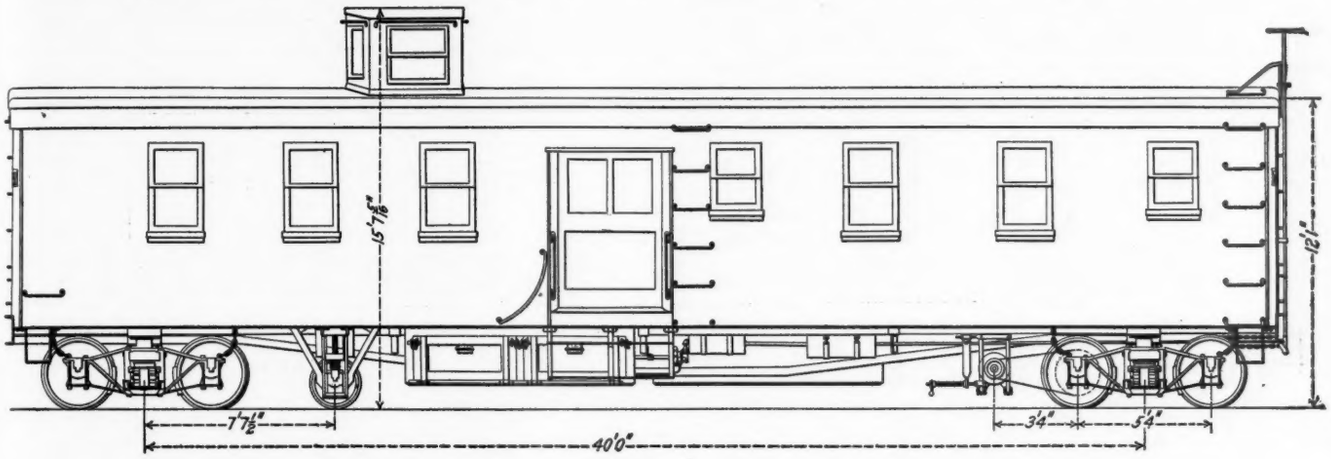
The center sills are of the fish-belly type, 28 in. deep at the center and 13 in. deep at the bolster. The web of the girder is ⅜ in. thick, with a 3½ in. by 3½ in. by ⅜ in. angle at the top, and two 3½ in. by 3½ in. by ½ in. angles at the bottom; there is also a ⅜ in. top cover plate the full length of the car. A ¼ in. steel plate covers the entire floor from the end sill to the inner edge of the body bolster at the dynamometer end. The body bolster is entirely of rolled and flanged steel parts with ⅝ in. by 16 in. top and bottom plates, and two ⅜ in. webs spaced 8 in. apart. The end sill is a 13 in., 32 lb., channel. The crossties have 5 in. by ¼ in. top and bottom plates with single flanged webs ⅜ in. thick. The posts,



Dynamometer Car of 1,000,000 Lbs. Capacity; Atchison, Topeka & Santa Fe.

braces and plates in the side and end framing are steel angles with the dimensions shown on the general plan. The carlines are 4 in. I-beams split near the end, so as to form diagonal bracing at the plate.

A ⅜-in. steel plate covers the front end of the car for a height of 2 ft. from the floor. The length over end sills is 50 ft., and the extreme width is 10 ft. The working end of the car is 25 ft. in length, and contains the dynamometer, recording apparatus, switchboard, gage board, work benches, stove and desk. The rear half of the car contains four upper and lower berths, toilet room, closet and kitchen. The trucks are of the four-wheel arch bar type, with heavy elliptical springs and extra heavy arch bars. The wheels are 34 in. in diameter and have steel tires. The car is lighted by electricity from an axle lighting system, as will be explained later.



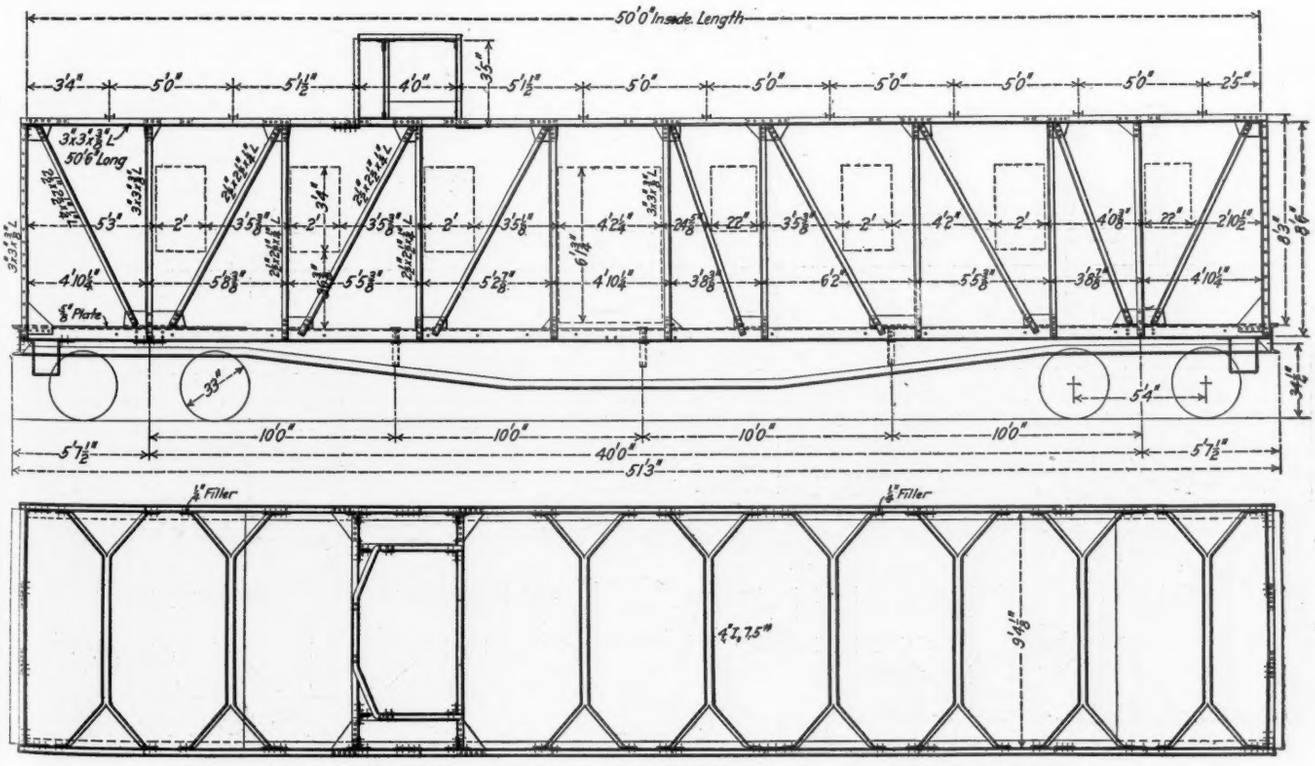
Side Elevation of Santa Fe 1,000,000 Lbs. Capacity Dynamometer Car.

DYNAMOMETER.

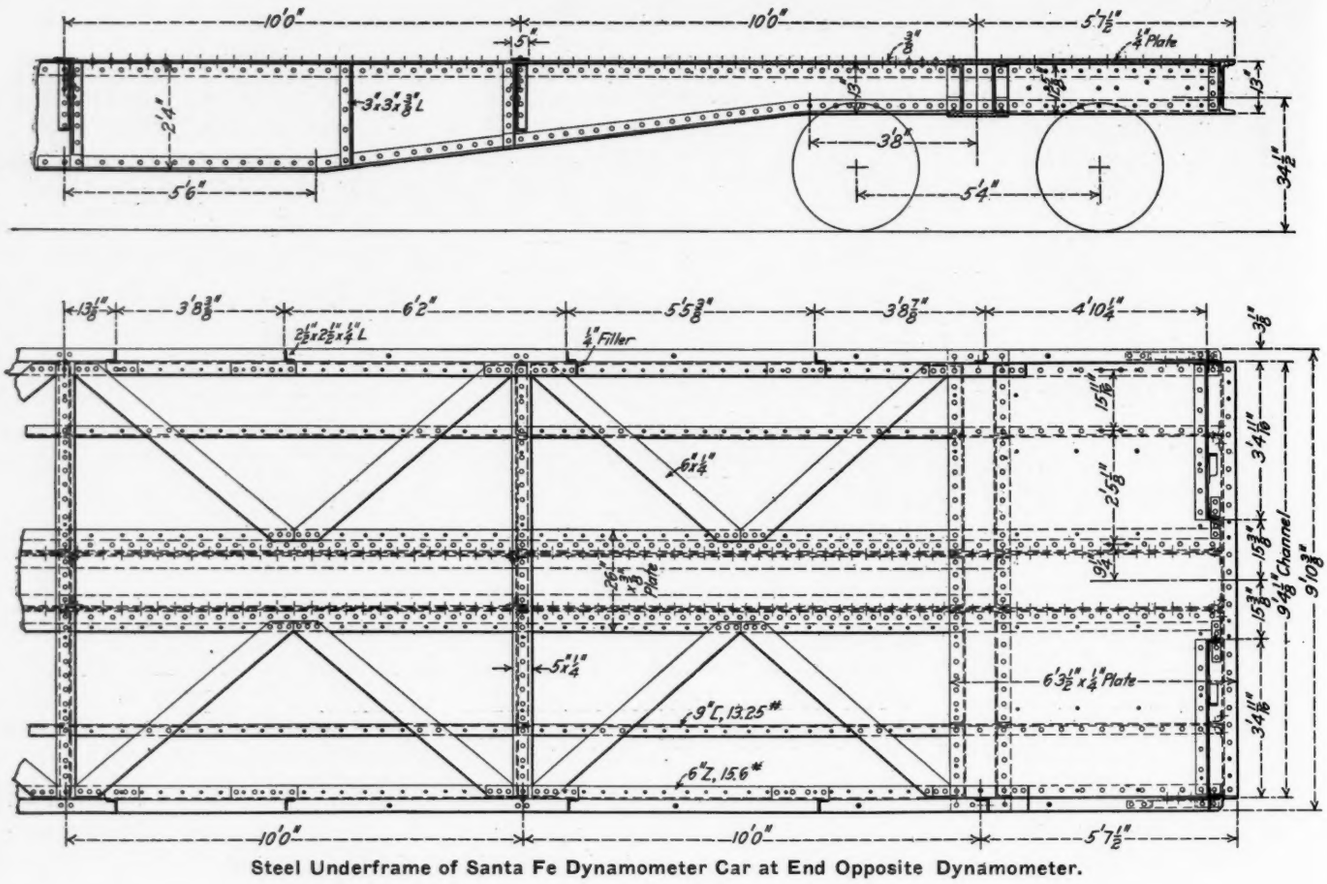
The dynamometer is of the double diaphragm type, recording both drawbar pull and drawbar push. The lever arms, with a ratio of five to one, are connected at one end to a filler block in the drawbar yoke and at the other end to a double piston, 20 in. in diameter, whose heads press against blind rubber gaskets, covering the liquid chambers. The piston is suspended by means of knife edges, in order to eliminate all friction. The bearings for the lever arms are small hardened tool steel pins surrounding the main pins. A mixture of glycerine and alcohol is used in the liquid chambers. These latter are connected to the recording apparatus and gage board by ¾-in. copper pipes. When the dynamometer is not in use the arms are brought to the center and held by four small jacks between the top of the arms and the cylinder casting. The dynamometer is so designed as to take and record safely a shock of 1,000,000 lbs. at the drawbar.

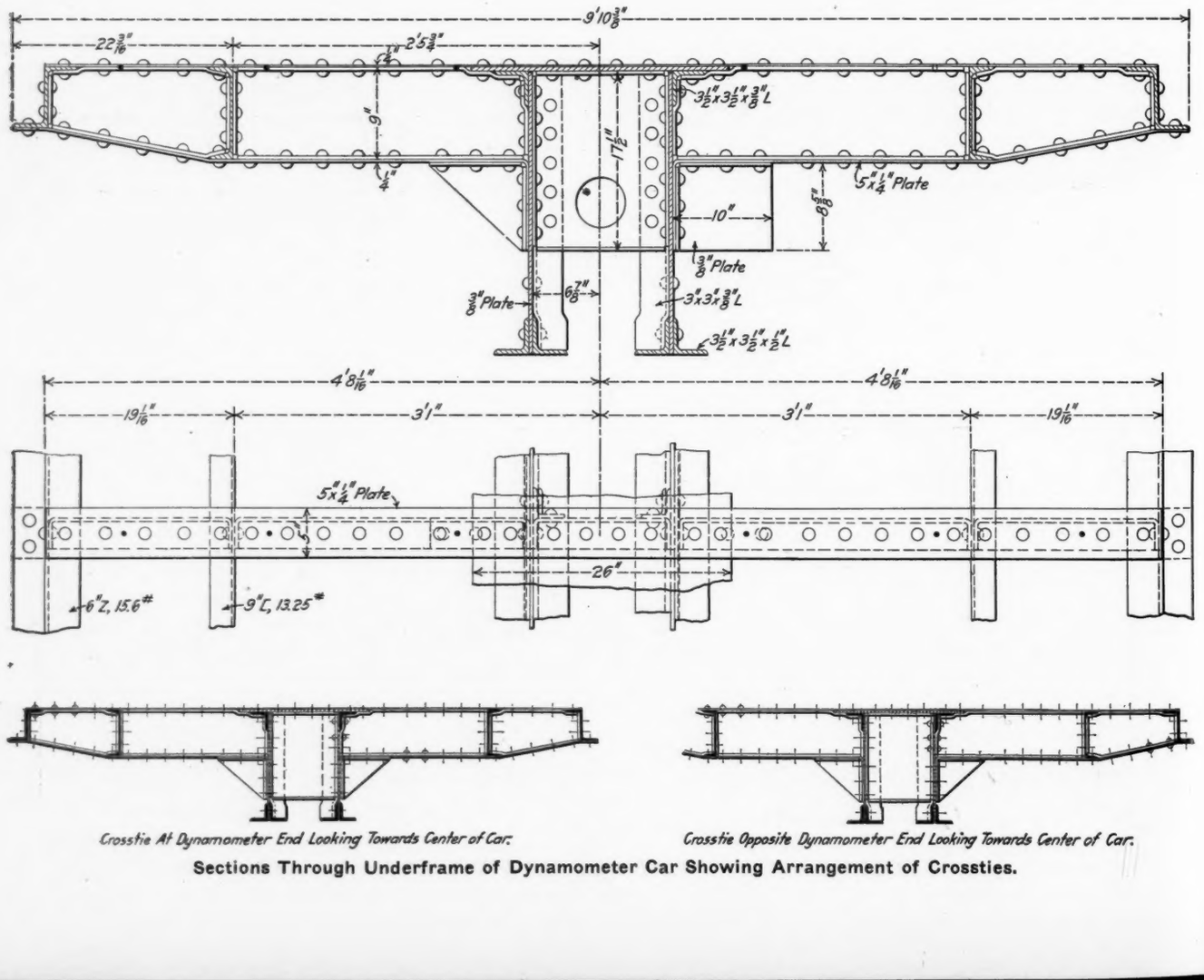
RECORDING APPARATUS.

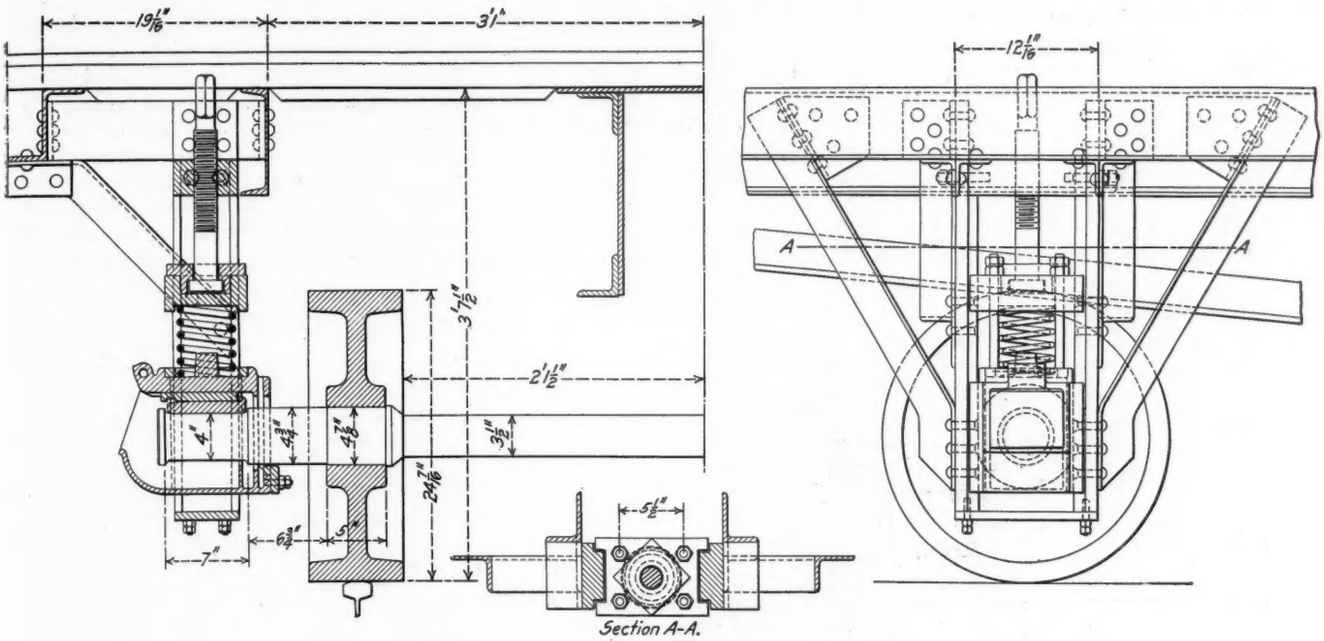
The recording apparatus is placed just back of the dynamometer and the following records may be made on the chart: Drawbar pull; drawbar push; speed; time either by five seconds or half-seconds; position of mile posts and stations; throttle opening; reverse lever; boiler pressures; indicator cards; train line pressure; brake cylinder pressure, and coal or oil fired. The



Steel Side and Roof Frame of Santa Fe 1,000,000 Lbs. Capacity Dynamometer Car.


10'0"
10'0"
5'7½"
5"
¼" Plate
3"x3"x⅜" L
2'4"
5'6"
3'8"
5'4"
34½"
13⅛"
3'8⅜"
6'2"
5'5⅜"
3'8⅞"
4'10¼"
2½"x2½"x¼" L
¼" Filler
6"x¼"
26"x⅜" Plate
5"x¼"
9"C, 13.25#
6"Z, 15.6#
6'3½"x¼" Plate
9'10⅜"
Steel Underframe of Santa Fe Dynamometer Car at End Opposite Dynamometer.

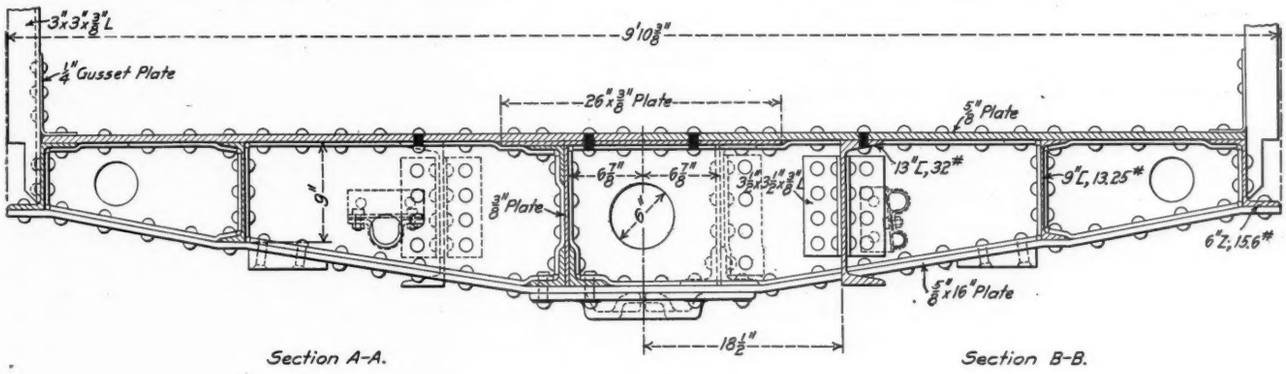

9'10⅜"
22⅜"
2'5¾"
9"
¼"
3½"x3½"x⅜" L
17½"
5"x¼" Plate
10"
8⅝"
⅜" Plate
⅜" Plate
6⅞"
3"x3"x⅜" L
3½"x3½"x½" L
4'8 1/16"
19 1/16"
3'1"
5"x¼" Plate
26"
6"Z, 15.6#
9"C, 13.25#
Crosstie At Dynamometer End Looking Towards Center of Car.
Crosstie Opposite Dynamometer End Looking Towards Center of Car.
Sections Through Underframe of Dynamometer Car Showing Arrangement of Crossties.

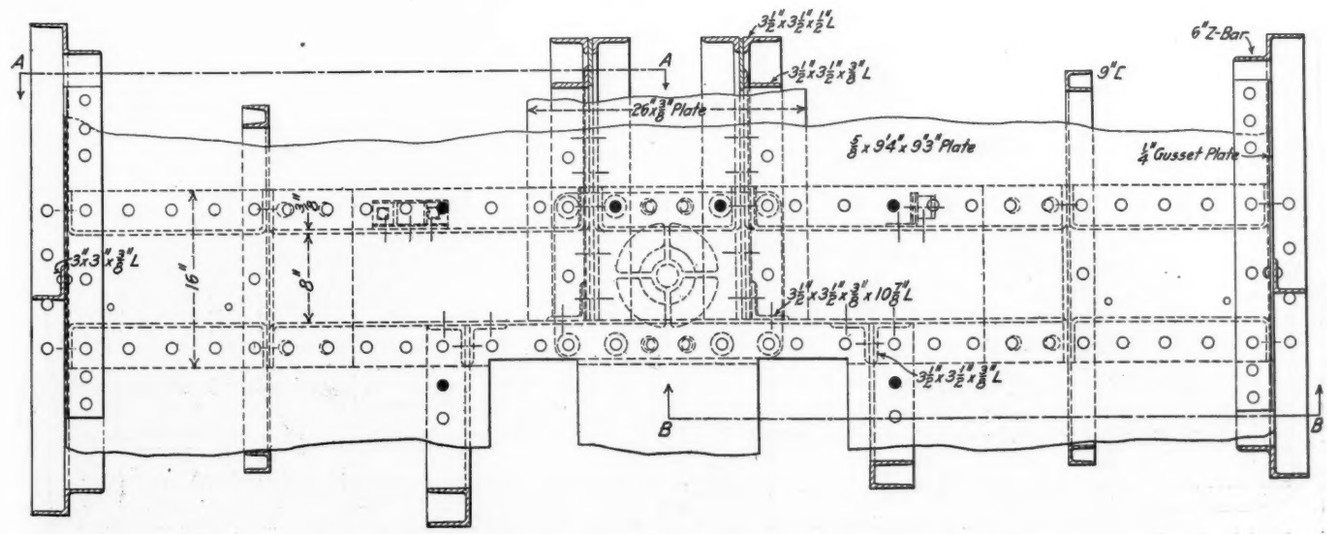


Auxiliary Truck; Santa Fe Dynamometer Car.

recording apparatus is mounted on a very heavy iron base plate through which a driving shaft passes from the auxiliary truck below. The auxiliary truck has two 22-in. wheels with 9-in. plain tires. It is connected to the main driving shaft through a train of bevel gears, which run in oil, by a universal joint. This auxiliary truck may be raised or lowered from within the car.

An electric motor is also provided for driving the recording apparatus. Three speeds are provided for the motor drive and three for the auxiliary truck drive, it being the intention to use the auxiliary truck drive in rating work and general engine tests, and the motor drive in special air brake and draft rigging tests. By means of two conveniently located levers and clutches it is



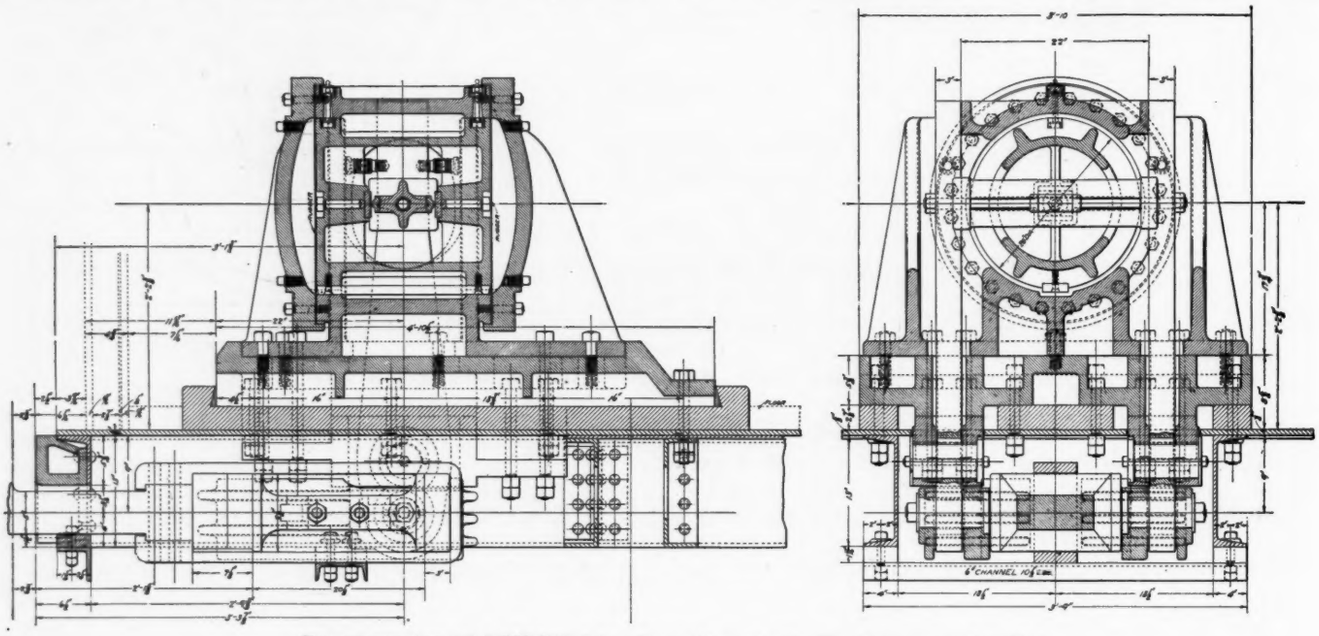


Body Bolster at Dynamometer End of Santa Fe Dynamometer Car.

possible to quickly change from one drive or one speed to another. The drive is so connected that reversal of direction of the car movement does not reverse the direction of chart travel. The records are made on a chart 15 in. wide, which is drawn over the table between two gear-connected rollers by means of friction. Both originating roll and receiving roll are located at the back of the machine, where they can be readily removed or put in place.

All curves are drawn by pens attached to hollow aluminum rods running at right angles to the paper. All datum line pens are connected to a single cross bar at the front, their records being made an inch in front of those made by the recording pens. The pens are made of small brass cups with phosphor bronze troughs which carry a thread wick from the barrel to the point; they will draw a line moving sidewise as well as forward.

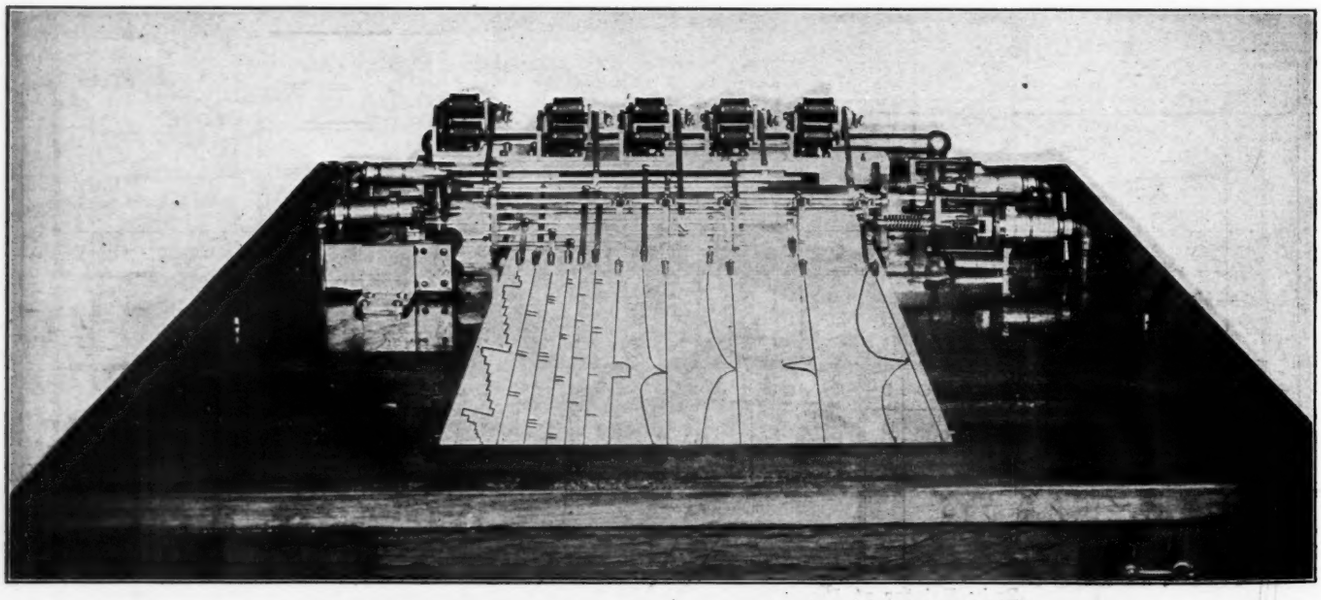
The pressures from the dynamometer are transmitted to standard outside spring Crosby indicators on one side of the recording table, it being the intention to put in different weights of indicator springs for the various classes of work. The curve of speed is obtained from a Boyer speed recorder located in the base of the recording apparatus and chain driven from the main shaft, it being so arranged that it may be driven at double its normal speed in freight service and at normal speed in passenger service, thus giving a large offset at low speeds when desired. The time record is drawn on one edge of the chart by means of a pen connected to a small electric magnet, which in turn is operated from an electric clock. Records of one minute, five seconds, or one-half second may be obtained. The record of locations is made by a small electric magnet in connection with a push button running to the observation cupola. The cupola is provided with an electric searchlight for night work.



Dynamometer of 1,000,000 Lbs. Capacity; Santa Fe Dynamometer Car.

The records from the locomotive are also made by means of electric magnets similar to that used in the location record. Two pens connected to standard Crosby indicators on the side of the table give a continuous curve of air pressure in the train line and in the brake cylinder, or if desired, in the auxiliary or supplementary reservoirs.

The gage board contains the following apparatus: One standard clock; one Haushalter speed recorder, driven from the main truck; four air recording gages; four standard air gages; one gage



Recording Apparatus In Dynamometer Car Showing the Pens and Chart.

for the dynamometer showing drawbar pull, two electric counters.

ELECTRICAL EQUIPMENT.

Electricity for the lighting of the car and the operation of all magnets and motors is obtained from a set of 16 storage battery cells, located beneath the car. These in turn are charged by means of a Bliss generator, driven from the rear truck of the car. The voltage used throughout is 32. The switchboard is so arranged with a series of multiple jacks that it is possible to put any voltage on any magnet, thus making the whole arrangement flexible and convenient. The total weight of the car is 91,000 lbs. The outside is finished in standard Pullman color, and the interior in French gray.

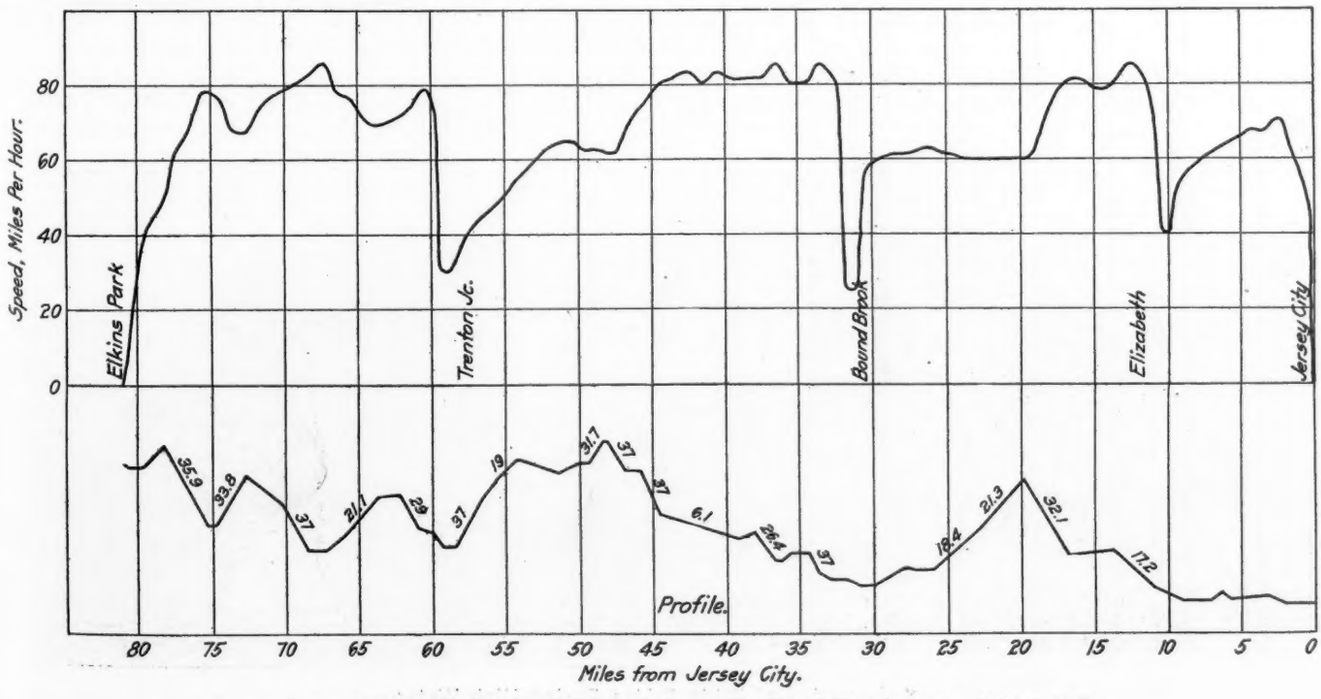
FAST RUN ON THE READING.

BY PAUL T. WARNER.

There are few trains in this country which have a faster or more difficult schedule than train 602 on the New York branch of the Philadelphia & Reading. This train leaves Philadelphia at 8:00 a. m., and is allowed 98 minutes for the 90.2 miles to Jersey City. Stops are made at Columbia avenue, Wayne Junction, Pa., and Elkins Park, 81 miles between the last named point and Jersey City, N. J., being allowed 80 minutes on the time card. As this is an important train, largely patronized by business men, every effort is made to bring it through on time. The accompanying diagram shows a graphic log of a run made by this train a short time ago. The train was made up of 8 cars, estimated to weigh about 450 tons, and was handled by a Class P-6-B locomotive No. 302. This is a two cylinder single expansion Atlantic type locomotive using saturated steam, and was built in the company's shops at Reading. The boiler is of the Wootten type, and the steam distribution is controlled by piston valves controlled by the Walschaert gear.

As far as track and equipment are concerned, the New York branch of the Reading System is well suited to high speed service; and the same is true of the Central Railroad of New Jersey, over whose tracks the Philadelphia-New York trains operate between Bound Brook, N. J., and Jersey City. The profile between Elkins Park and Bound Brook is undulating, with maximum grades of approximately 37 ft. per mile. Between Bound Brook and Jersey City there is a summit near Westfield, which is approached from the west by a grade of 21.3 ft. per mile. The curvature is generally light. Data for the log was secured with the help of an ordinary watch by noting the time in minutes and seconds of passing each mile post. While slight errors may exist for individual miles, it is believed that in no case do they exceed one second; while the elapsed time between termini is correct, as a cumulative error is impossible. The train left Elkins Park at 8:20:37, over two minutes late, and reached Jersey City at 9:36:40, over a minute in advance of schedule; the 81 miles thus being covered in 76 min. 3 sec., or at an average speed of 63.9 m. p. h.

For the first 20 miles after leaving Elkins Park, the speed was influenced solely by the grades, and the speed changes accord, in a conspicuous degree, with the variations in the profile. After passing mile post 60, speed was reduced to scoop water and to cross the Delaware river bridge, which was in process of reconstruction. Then followed some heavy work until mile post 48 was reached, after which the speed rose rapidly. The 12 miles between mile posts 45 and 33 were covered in 8 min. 46 sec., equivalent to an average of 82.2 m. p. h., while the maximum speed was a mile in 42 sec., or 85.7 m. p. h. The manner in which the speed curve follows the profile undulations between posts 38 and 33 is most interesting. After passing post 32, the speed was reduced to run through the junction with the Central Railroad of New Jersey, a short distance west of Bound Brook. Once on the Jersey Central tracks the locomotive quickly accelerated and maintained a steady speed of 60 m. p. h. on the 21.3 ft. grade east of Plainfield. Assuming a frictional resistance of 10 lb. per ton, the drawbar horse power at this point must have been about 1,300, and the total indicated horse power between 1,800 and 1,900. After passing the summit there was a rapid acceleration and the maximum speed again reached a mile in 42 seconds. A sharp reduction, presumably for a signal, occurred near mile post 10, after which the run into Jersey City continued without incident. Altogether there are eleven trains each way per day on this division, which are scheduled to run from terminus to terminus in 98 minutes. The majority of these run over the Neshaminy cut-off, which omits one stop and is a trifle shorter than the route taken by train 602, while the grades are somewhat easier. Between mile post 69 and Jersey City, however, all trains use the same line; and the service over this division is remarkable for its speed, frequency and the regularity with which it is performed.



Speed Curve of Reading Locomotive No. 302 and Profile of Division Over Which It Ran.

BRIDGE CONSTRUCTION ON THE OREGON TRUNK RAILWAY.

The construction of the Oregon Trunk railway, which was described in the *Railway Age Gazette* of March 22, involved the building of ten steel bridges, four of which are comparatively large structures. The Columbia river bridge at Celilo, Ohio, is the largest, possessing a number of unusual features, while the Crooked river bridge, near the southern end of the line, is quite unusual both in design and method of erection.

Two locations for the crossing of the Columbia river to connect with the Spokane, Portland & Seattle were considered when the Oregon Trunk line was being located. In addition to the location adopted at Celilo, another crossing about five miles farther down stream, nearer The Dalles, was investigated. The difficult and expensive approach to this site, and the greater total mileage necessary to construct, if it were used, caused it to be abandoned. The bridge was built directly over Celilo falls. Here the river narrows down to a width of approximately 2,700 ft. from shore to shore, and is bordered by high basaltic bluffs on either side. At low water the bed of the river consists of a number of basaltic islands separated by channels of swift water. The main channel near the Oregon shore is about 300 ft. wide, and the others are narrower. During high water all of these islands are submerged. The bridge consists of 2,000 ft. of plate girder spans, six riveted through spans 230 ft. long, one 250-ft. draw span, and one 320-ft. pin-connected span over the main channel. The north approach is in the form of a wye connecting at both ends with the Spokane, Portland & Seattle.

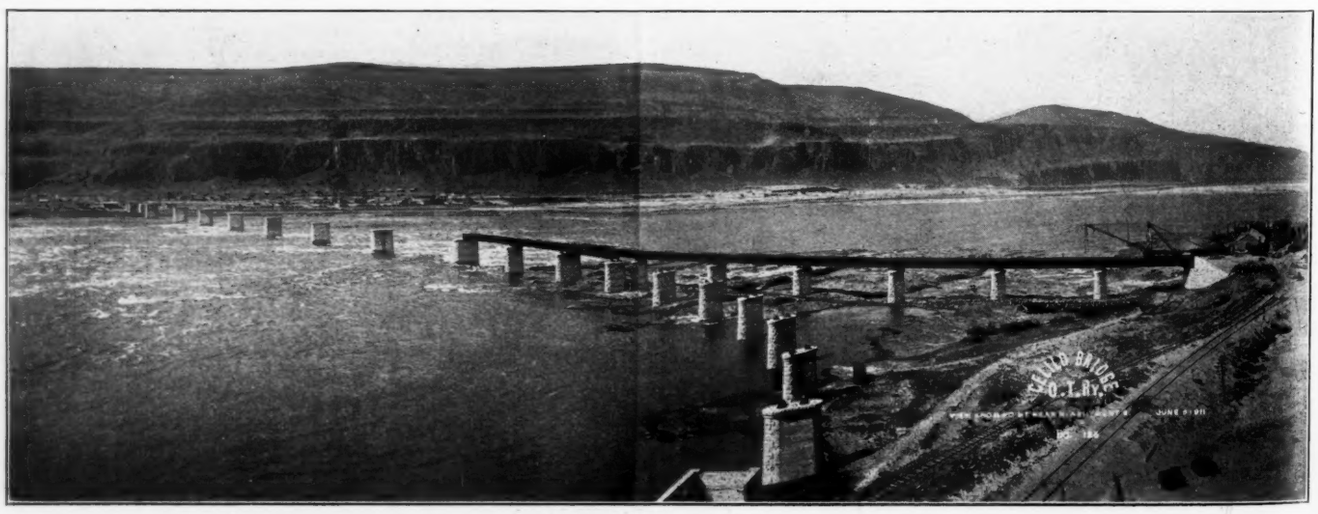
The location of these islands and intermediate channels presented an opportunity for an interesting study of the proper location of the piers. It was not possible to secure a location for the bridge crossing the main bed of the river at right angles, so it was necessary to adopt a slight skew. The piers were located so that all of them came on islands above ordinary low water. The south leg of the draw span extends over the government canal now being built around the rapids. In order to locate both the center pier and the north pier of the draw span on one of the islands that appear in the river at low water, and to provide the necessary opening over Celilo canal, the draw was designed with unequal legs. The bridge is unusual in respect to the foundations, as they were built in the dry, and it is possible to examine them each year. The piers are built of concrete with granite nosings, beltings and copings, while the approach piers on the south side are built entirely of concrete. The design of the superstructure contained no unusual features.

The erection of the structure presented some exceptional difficulties. The prevailing high winds, carrying fine Columbia river sand, make it almost impossible to work outside at times, and erection work, if possible at all, then becomes dangerous. For this reason the structure was designed to reduce as much as possible the time necessary for assembling in the field. The placing of falsework in the narrow channels was out of the question, and the spans were so designed that they could be erected by cantilevering out over the channels until it was possible to reach falsework on the other side. Special erection devices, consisting of temporary riveted tension members, were inserted between the hip joints of adjacent spans. The spans already erected then acted as anchorage for the one being erected.

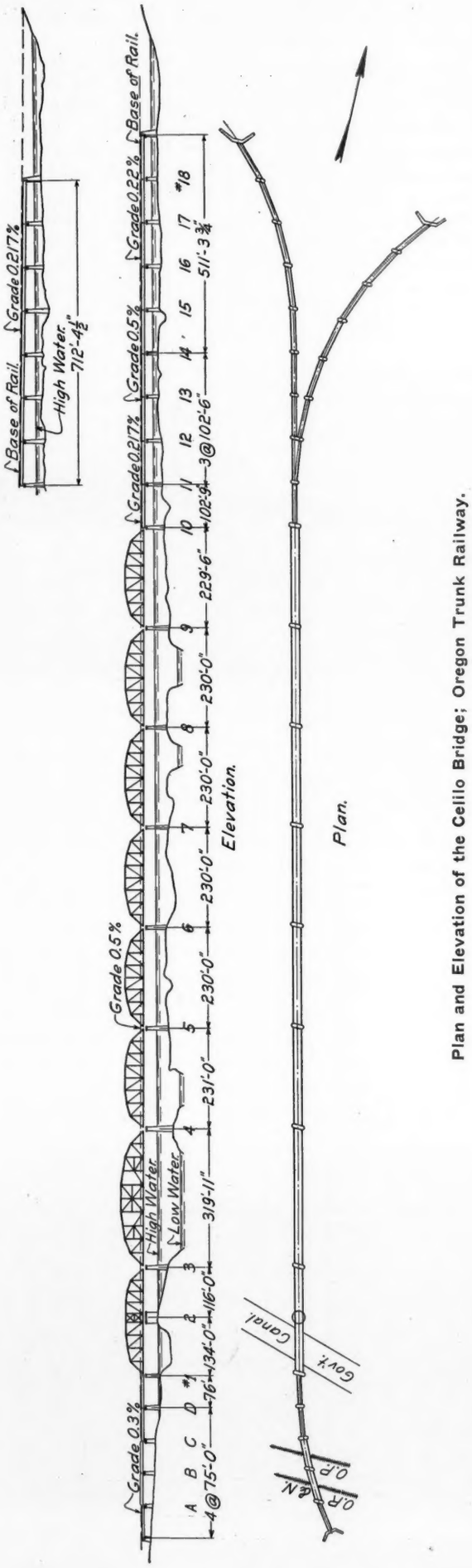
Celilo Bridge Nearing Completion.

Both a traveler and derrick cars were used in the erection of the structure, although the derrick car was found to be best suited for handling the spans of moderate length. Ground was broken for the foundations of this structure on July 9, 1910; the substructure was completed June 5, 1911, and the first train crossed the bridge January 4, 1912, the total time of construction being 17½ months.

South of Celilo the Oregon Trunk crosses the Des Chutes river three times in the distance of about 100 miles that it follows the stream. In order not to delay the track-laying by waiting to build temporary timber bridges at these points, and also across several tributaries entering the river, until material could be brought in by rail, the timber was sawed at the nearest

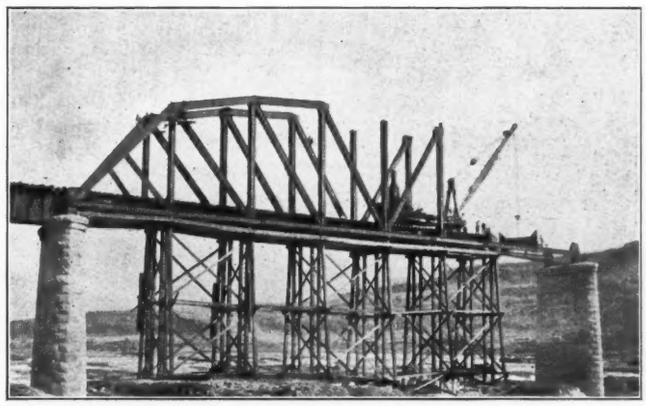


Construction of Celilo Bridge During High Water.



Plan and Elevation of the Celilo Bridge; Oregon Trunk Railway.

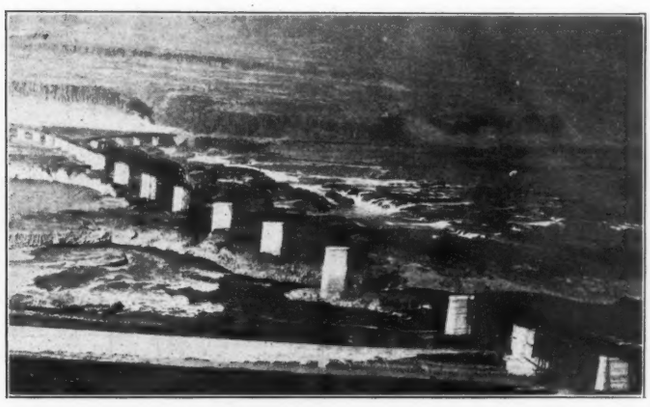
available mills in the timber belt and hauled by teams into the canyon over the very difficult and precipitous construction roads. The timber bridges were then completed, except for decks, stringers and ties, which were placed after the track was laid to the crossing. The standard timber trestle of the Oregon Trunk was used for these structures, being modified only to allow placing the permanent bridges without interference. All stringers, ties and guard rails were of Oregon or Washington fir, and all other material of Central Oregon pine or fir. The bents were composed of six 12-in. x 12-in. posts, the two outside posts being battered 2½ in 12, the two inner ones 1¼ in 12, and the two center ones being vertical. The bents are sway-braced and sash-braced with 3-in. x 10-in. plank and 12-in. x 12-in. timbers are used as sills. Six 8-in. x 18-in. track stringers with two outer jack stringers of the same size are used with a spacing of bents varying from the standard of 13 ft. 8 in. to 15 ft., the latter



Erecting Entire Span on Falsework.

spacing being used in several cases to conform better with the erection of the permanent spans.

At the first crossing of the Des Chutes the condition presented unusual difficulties which were solved in an interesting manner. To avoid following around a long "horse shoe" curve in the river at this point, the road saves distance and curvature by crossing the Des Chutes, passing through an 800 ft. tunnel and immediately recrossing the stream. The first bridge is placed at a point where the river is confined to a channel about 120 ft. in width at normal stage, through which it rushes with high velocity. Efforts to take soundings here with a 125-lb. anvil lowered from a platform suspended from a cable across the stream were entirely unsuccessful on account of the force of the current. As it was impossible to place foundations for timber bents in such a stream, a Howe truss of 120 ft. span was decided on, this truss to be erected on a suspension span which was first swung across the stream. To provide a foundation for a crib which supported the Howe truss on the south side of this stream, 2,000 cu. yds.



Celilo Bridge Construction During Low Water.

of riprap was placed on that side of the channel, using no stone smaller than 1 cu. yd. in volume. This riprap was transported across the river by a traveler running on a 1½-in. cable way. The riprap was thus brought up above the water level and the crib placed in the dry. On the north side the crib was set directly on the rock bottom in about 10 ft. of very swift water. In constructing this a raft was floated over the site on which was laid out the plan of the crib. Soundings were then taken around this outline and the crib framed to fit the bottom, which was very irregular. The lower part of the crib was assembled, floated to position and sunk by weighting it with riprap until it came to bearing on the bottom. It was then built to its full height and filled with rock. The towers of the suspension span were built on these cribs.

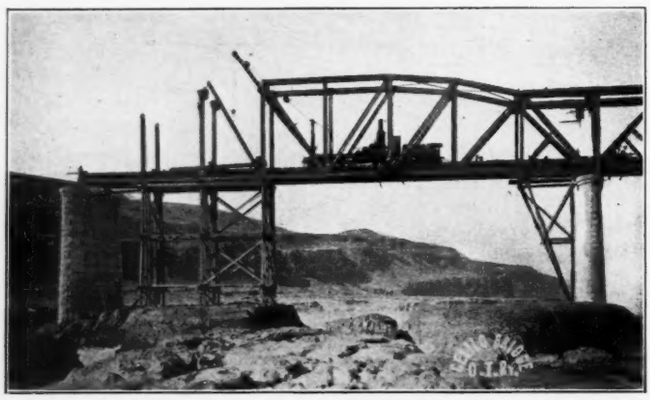
The bottom chords of the three trusses of the timber span were packed on needle beams and hung from the suspension cable. The middle truss was completed first, after which the needle beams were hung from it so as to largely throw the load of the other two trusses on the center truss as they were being built. As the base of the rail at this crossing is about 70 ft. above mean water level, timber bents were required on top of the Howe truss to carry the track. These were built with vertical posts so spaced as to allow the ready placing of the steel later without interfering with traffic. The truss span is approached on both sides by timber trestles about 70 ft. in height, the bents for which were set on mud sills. As an additional complication of the work here, the bridge is on a 5 deg. curve, and it was necessary to set the bents parallel to the center line of the future concrete piers, which brought them skew to the structure itself.

At the second crossing the timber bridge was about 600 ft. long and was carried on piles across the channel. Provision was also made here for placing the steel truss spans without interference and for setting the approach girders by removing the pony bents placed on top of the standard bents.

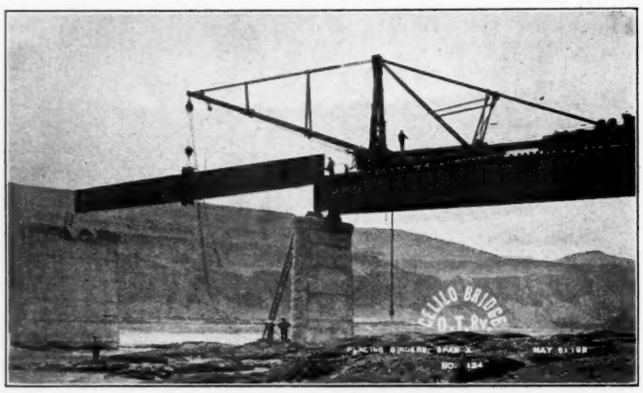
There are four concrete piers and two concrete abutments for each of these bridges. All abutments, except the north one at the first crossing, are of the U-type with the track carried on a fill, and with a small amount of reinforcement. The north abutment is also a U abutment, with an arched front wall, but the track is carried on a 3-ft. floor slab. It is 60 ft. high on the river side. The abutments were made of 1:2½:5 gravel concrete; the piers of 1:2:5 concrete in the shaft, and the copings of 1:2:4. The noses were formed by two intersecting arcs and protected by 10 in. 25-lb. I-beams, embedded in the nose with one flange exposed.

The piers, with the exception of pier II at both the first and second crossings, were based on rock, excavation being made in the open in cofferdams. At two of the piers difficulty was experienced in getting tight dams on account of the necessity of constructing them on the nearly, or quite, bare rock bottom of the river. In these cases, after satisfactorily cleaning off and preparing the bedrock, the concrete of the footing was placed under water by bucket and tremie. At pier II of the second crossing, where rock was about 40 ft. below the surface, a cofferdam of Wakefield sheet piling was driven into the sand, penetrating as nearly as possible to rock. The excavation was made inside this dam with a clam-shell. Piling was then driven and cut off under water and a concrete blanket placed under water with a bottom dump bucket. After the concrete set the cofferdam was pumped out and the pier completed in the dry, the sheeting being cut off at the top of the footing and left in to protect the pier against scour. Pier II at the first crossing was founded on a bed of big boulders and gravel.

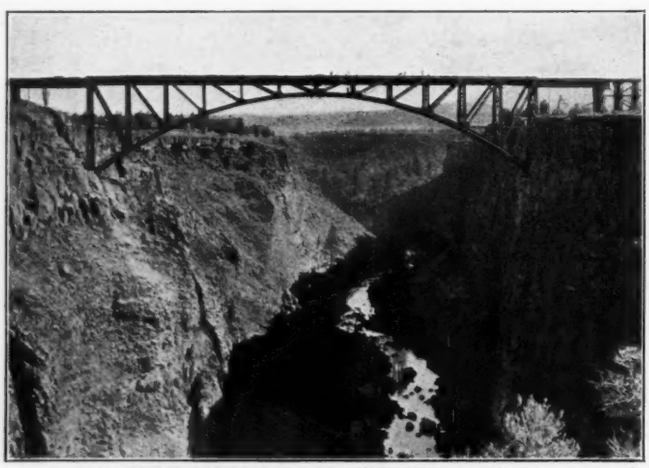
The permanent bridges are designed for the standard loading



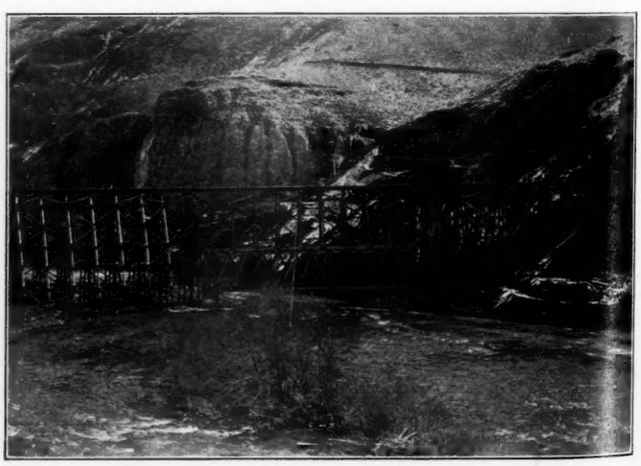
Erection of Truss Span by Cantilevering Across Deep Channel.



Placing Girder with Derrick Car.



Crooked River Arch; Oregon Trunk Railway.



Des Chutes River Crossing Showing Howe Truss with Trestle.

of the Oregon Trunk—two 188.5-ton engines followed by 5,000 lbs. per lineal foot for the trusses and one 214.5-ton engine followed and preceded by 5,000 lbs. per foot for stringers, floor beams and all girder spans.

At the first crossing there are three 75-ft. girder spans, supported by single bents on the north side, a 165-ft. Warren riveted deck truss across the channel and another 75-ft. girder on the south side. The location of this bridge on a curve, the piers being parallel to the channel, required the skewing of all spans, complicating their details somewhat. The second crossing is simpler, being on tangent and requiring three 120-ft. Warren riveted deck trusses and two 75-ft. girder approach spans. At the third crossing the grade is nearer the river and two 175-ft. Pratt riveted trusses are used. The other bridges are smaller crossings over tributary streams and through, and deck girders of from 32 ft. to 100 ft. in length are used. Girders 60 ft. and under in length were shipped after they had been assembled and riveted.

The bridge across Crooked river, three miles south of Opal City, consists of one 340-ft. arch span, with a 60-ft. deck girder approach on each end. This structure crosses Crooked river canyon 320 ft. above the water level, the walls at this point being practically vertical. The arch was erected by cantilevering out, a traveler handling the material. The method adopted for anchoring was unique, in that the adjusting device was connected to heavy bars anchored vertically into 20 ft. of concrete, and that the adjustments were made by the use of bronze bearings which were tightened or loosened as occasion demanded. This structure will be described more in detail in a later issue.

The timber bridges, and all the falsework, including the Howe truss at the first crossing of the Des Chutes, were designed and erected by the engineering department of the railway company. R. Budd, chief engineer. The permanent structures were designed by and erected under the supervision of Ralph Modjeski, chief engineer of bridges. H. M. Harps was resident engineer; M. B. Case, assistant engineer, and M. H. Combs, inspector at Celilo; W. R. Weidman was resident engineer, and Clement E. Chase, assistant engineer, in charge of work south of the Columbia river. We are indebted to Messrs. Budd, Modjeski, Combs and Chase for assistance in securing this information.

In reply to members of the Prussian parliament who urged that committees of workmen be consulted concerning the wages to be paid them, an official of the Prussian state railways declared that it was a rule to give the men opportunity to discuss questions of wages and to make suggestions. In 1910 the workmen's committees discussed 5,482 questions, and more than a third of these concerned wages. More than half of their requests were granted. So far from being without effect, the workmen value the committees so highly that they are continually asking for the establishment of new ones. In arranging prices for piece work, not the committees but a large number of men engaged in each kind of work are consulted. During the last year the higher wages had added $2,500,000 to the working expenses, and they will cost still more this year. A committee member may propose whatever he pleases. It would never occur to an official to dismiss him on that account.

WORKINGS OF THE ERDMAN ACT.*

BY CHARLES P. NEILL,
Commissioner of Labor.

The federal law, commonly known as the Erdman act, which provides a means for the mediation and arbitration of controversies affecting railways and their employees engaged in railway train service, has now been on the statute books of the United States for more than 13 years, but it may be said to have been in practical operation only about five years. During the first eight and a half years following the enactment of the law, in June, 1898, one attempt only was made to utilize its provisions. This attempt, which was made within a year after the passage of the law, proved entirely fruitless. During the past five years the provisions of the law have been invoked in nearly 60 different controversies. During that period its provisions have been invoked with increasing frequency, and from the middle of 1908 to the present time there has been only one period as long as three months during which the mediators have not been called upon to act in some pending controversy.

The list of formal applications for mediation and arbitration is given herewith. This list, however, gives an inadequate idea of the extent to which the mechanism for mediation provided in the law has been utilized, as it contains no mention of a considerable number of cases in which controversies arising over the application or the interpretation of agreements made under the provisions of the law have been brought back to the mediators and understandings have thus been reached over the matters in dispute.

In the following table the number of cases brought before the mediators under the act, the railway mileage involved, and the number of employees directly involved are shown year by year, the cases being classified according as the application came from the railway company, the employees, or from both jointly:

Year.	Applications by company.			Applications by employees.			Joint applications.			Total.		
	Number of cases.	Railway mileage involved.	Employees directly involved.	Number of cases.	Railway mileage involved.	Employees directly involved.	Number of cases.	Railway mileage involved.	Employees directly involved.	Number of cases.	Railway mileage involved.	Employees directly involved.
1899	..	.....	.....	1	.....	.....	..	.....	.....	1	.....	.....
1906	1	2,350	600	..	.....	.....	..	.....	.....	**1**	**2,350**	**600**
1907	5	117,850	46,350	..	.....	.....	1	5,800	1,250	6	123,650	47,600
1908	1	7,000	5,350	4	16,800	6,300	2	11,050	4,600	7	34,850	16,250
1909	2	2,200	380	5	15,370	10,705	2	19,150	3,400	9	36,720	14,485
1910	6	257,350	71,330	2	330	87	8	33,270	7,145	16	290,950	78,562
1911	4	10,440	2,830	1	70	38	3	6,850	2,685	8	17,360	5,553
Total	19	397,190	126,840	13	[2]32,570	[2]17,130	16	76,120	19,080	48	[2]505,880	[2]163,050

[2] Not including 1 case for which mileage and employees directly involved were not reported.

In spite of the large number of serious controversies successfully handled, the law may be said to be in an experimental stage, and it is too early yet to predict that it will meet the exigencies of the future as it has those of the past five years. Some of its defects have already become apparent, and in a number of aspects it can be strengthened and improved through amendment, but its success has been marked during the five years in which it has been in practical operation. In no case has there been a repudiation by either side of the award of an arbitration board. In some instances, as is inevitable, there have been different interpretations placed on certain sections of the award and there has been consequent friction in some of these instances, but the awards as a whole, it can be said, have been acceptable and lived up to by both sides.

At the time the Erdman act was passed practically all the discussion was focused on its arbitration features and little attention was given to its provisions for mediation. Experience has shown, however, that the latter are the more important and efficacious features of the law. Of the 44 cases in which mediation under the act was invoked, only 8 have been carried on to arbitration. These figures do not show the whole disproportion, however, for in each of these 8 cases the greater part of

*Abstract of part of Bulletin No. 98 of the Bureau of Labor.

the matters in controversy were settled by mediation and only a few of the points were carried to arbitration. In addition to these, four other cases have been arbitrated under the provisions of the Erdman act, these cases having been submitted to arbitration directly by agreement between the parties in controversy without first invoking the mediation proceedings of the act.

In all cases, either of mediation or of arbitration, the employees who were parties to the proceedings have been organized and have always been represented by the officials of their respective organizations. In mediation proceedings they have always been represented by officers of the national associations. Although the law applies equally to organized and unorganized workers, it is difficult to see how its provisions could be carried out with any degree of satisfaction except in cases where organized employees are dealt with. Much of the success which has marked the operation of the law thus far is probably due to the fact that the classes of employees with whom it deals are strongly organized and well-disciplined groups.

PROCEDURE IN A CASE OF MEDIATION.

In the 48 cases of mediation and arbitration in which the act has been invoked, applications have in 19 instances been made by the railway companies involved, in 13 cases by officers of organizations representing the employees involved, and in 16 cases by representatives of both parties to the controversy. The applications made by the employees approach in number those made by the companies, but cover proportionately a much smaller mileage and involve a smaller number of employees. When a really serious strike is threatened it is naturally the company rather than the employees which involkes the friendly offices of the mediators.

In a few cases applications, either made jointly or by the employees alone, have been made before a strike vote has been taken. In such instances the mediators, in deciding upon their action, have been governed by the gravity of the existing situation. The law itself provides that its machinery shall be utilized only when traffic either has been actually interrupted or is seriously threatened with interruption. But the law does not require the taking of a strike vote as a preliminary to invoking its provisions, and in each case the mediators are left free to exercise their own judgment as to whether or not the conditions assumed by the law exist. It is sometimes undesirable and unwise to compel the employees to go to the expense of polling the road on the question of a strike, and at the same time to stir up the unrest and friction attendant upon that process. The mediators, therefore, have only required that they be satisfied that the parties to a controversy can not themselves reach an agreement, and that the dispute is of such a character that it might, if not settled, bring about a strike with consequent serious results to the public dependent upon the road involved. Applications of this kind, however, are exceptional. In the great majority of cases in which intervention is sought strike votes have actually been taken and strikes seriously threatened before the cases were taken up under the provisions of the Erdman act.

It is essential, if the Erdman act is to be effectively administered, that action be taken quickly and that as little formality as possible be required in the matter of making and acting upon applications for mediation.

Almost invariably, no matter by which side the application has been made, the offer of the mediators' services is at once accepted. When both sides have agreed to mediation proceedings they are as a rule begun very promptly, usually the only delay being that which is involved in getting the parties concerned together at the place decided upon.

The proceedings are purposely kept as informal as possible, in order that they may be the more readily adapted to the exigencies of any given case. Conferences are always held with the two parties to the controversy separately, and a joint meeting is never arranged until either a complete settlement of the questions in dispute or an agreement to arbitrate has been brought about by the mediators and agreed to in writing by the two parties.

Ordinarily the mediators begin by meeting the representatives of the side by which the mediation was invoked. After learning the matters at issue and discussing these in a general way, a conference is held by the mediators with the other party to the dispute. Successive conferences are then held by the mediators with one or the other party alternately, or it may happen that several successive conferences are held with one side before again conferring with the other side. Some cases have been brought to a successful termination within a few days, but these are exceptions; from one to two weeks is more nearly the rule. In some of the large cases where conditions were peculiarly acute, and a tension existed which made it important to secure a settlement at the earliest possible moment, conferences have for days at a time been carried on throughout the entire day and far into the night; and even what were practically all-night sessions have not been unusual.

While the procedure usually follows the above lines, any variation which seems desirable may be introduced, and the only fixed and unvarying rule is that neither side shall know what concessions the other side is willing to make unless and until an amicable agreement is reached. This rule has been adopted because both sides are more likely to make concessions if there is no danger that these concessions may later on be used to their disadvantage if the case should go to arbitration. It is always possible that the mediation proceedings may prove ineffective and that the case may go to arbitration. In that event, if any concessions offered by either side were known to the other side and could be adduced before the arbitrators as offers once made, it is obvious that the side which had offered the concessions in the mediation proceedings would be to that extent at a disadvantage in arbitration proceedings. The rule above referred to prevents this difficulty and leaves both parties free to suggest concessions without fear of future prejudice. In the event of a failure to secure a settlement through mediation in any given case, neither party at the end of the proceedings would have any definite knowledge of what concessions the other had been willing to make, and both are therefore in the same relative position as they were when the proceedings began. Neither has gained any tactical advantage, nor has either had its side of the case prejudiced by what has passed during the mediation proceedings.

No minutes are taken nor are any formal records kept of what occurs in the meetings between the mediators and the respective parties to the controversy. Ordinarily the only thing which becomes a matter of formal record is the final articles of settlement agreed to and signed by the parties in dispute. Unless requested or authorized to do so by the parties to the controversy, the mediators do not make public the terms of settlement agreed upon through mediation.

ARBITRATION UNDER THE ERDMAN ACT.

The law provides that in the event the efforts to secure an agreement through mediation should prove unsuccessful the mediators shall endeavor to induce the parties to the controversy to submit their differences to an arbitration in accordance with the provisions of the law.

Under the provisions of the law one arbitrator is selected by each party to the controversy, and the two thus chosen select a third, provided they are able to agree upon such third arbitrator within five days after their first meeting. In the event of their failure to agree upon the third arbitrator within these five days, he is named by the presiding judge of the Commerce Court and the Commissioner of Labor acting together.

From January, 1907, up to the present time there have been 12 arbitrations under this law. In only three cases out of the 12 have the two arbitrators appointed, respectively, by the parties to the controversy been able to agree upon a third arbitrator. The selection of the third arbitrator by the mediators has been a difficult and embarrassing duty and one that involves a considerable degree of responsibility. It is practically inevitable that the third arbitrator is unfamiliar with the questions at issue. The contracts between the railway companies and the em-

ployees engaged in train operation are complex agreements involving many matters of detail which it is important for an arbitrator to understand, but of which few persons have any correct appreciation unless they have been familiar with railway operations at first hand. Obviously anyone having this familiarity would be either a former manager or operating official of a road or a former employee who had been engaged in train operation. While the mediators could unquestionably find and agree upon some one of either of these classes who in their judgment would be absolutely fair-minded, it is obvious that the appointment of such person might be looked upon with distrust by one or the other side to the arbitration. If the other two arbitrators should differ, each one leaning to the side by which he had been appointed, and the third arbitrator, joining with the one appointed by the interest with which he had formerly been affiliated, should render an award favorable to that side, there would more than likely be an added feeling of dissatisfaction with the award on the part of the interest which had lost by the decision, and criticism on its part of the mediators for making such appointment. In any event, dissatisfaction with an award and consequent criticism of the appointment of the third arbitrator is to be expected; and this would not be a factor to be taken into consideration by the mediators in choosing an arbitrator were it not that the character of their work in mediation is delicate, and anything tending to create distrust of their fairness or their judgment on the part of either employer or employee would lessen their usefulness and hamper their work under the law. In a word, it is necessary that the person appointed by the mediators shall not only in their judgment be fair-minded in fact, but shall be free from any present or past affiliations which might justify either side in doubting his actual fair-mindedness.

It would, of course, be particularly unfortunate if by any chance the mediators should unknowingly appoint as third arbitrator some one who during the five days spent by the two arbitrators first appointed in considering a third arbitrator had been considered and rejected by them. To avoid this possibility, the meditators, when notified by the two arbitrators of their inability to agree upon a third arbitrator, request that they be given a list of the names, if any, that have been discussed or proposed and rejected. In some instances, in the hope of simplifying their own task and of finding a third arbitrator who would unquestionably be acceptable to each of the other two arbitrators, the mediators have asked each of the arbitrators already appointed to submit a list of names of persons who would not only be satisfactory to the side that had chosen the arbitrator making up the list, but whom that arbitrator had a right to feel would be entirely acceptable to the other side. The mediators had hoped that perhaps one name might appear on both lists, and by the selection of that name they could assure themselves that the appointee was entirely satisfactory to the other two arbitrators. This hope, however, has never been realized.

The railway companies have usually frankly named as their arbitrator one of the operating officials of the road or roads involved, or an operating official of a neighboring road, and the organizations representing the employees have on their part frankly selected as their arbitrator one of their own officials. While on the face of it this might seem a matter for criticism, it is not at all certain that it is not after all the wiser course to pursue. Ordinarily each side is convinced of the fairness of the position that it has taken in the controversy which brought about the dispute and led up to the arbitration; and each side probably feels that the inability of the other side to see the fairness of the opposing contention is due to a natural bias brought about by its own interests. Each side, therefore, in choosing an arbitrator naturally selects one who will look at the question from its own standpoint. Unavoidably, therefore, the third arbitrator really becomes the umpire and the other two arbitrators, through what might be termed an honest bias, become more or less advocates of the contention of the side by which they have been respectively appointed.

The questions involved in most of these controversies are complex and technical far beyond the ordinary wage controversy. The agreements regulate every phase of wage rates and working conditions. Questions under any or several of these provisions may arise in any arbitration, and arbitrators unfamiliar with the complexities might easily, if in their deliberations after the hearings are closed they are unaided by the presence of representatives of both parties, be very much confused over some of the questions, and might unwittingly render a decision the results of which would be far different from what they anticipated or desired. It may be argued, therefore, that there is considerable advantage in having present during the period of deliberation and the framing of an award two arbitrators who are themselves entirely familiar with every detail of the questions involved and who can foresee and point out the exact effect of any given decision proposed by the third arbitrator.

Section 4 of the act provides for an appeal to the courts from the decision of the arbitrators. After the award has been filed in court, the parties to the controversy are given only 10 days within which to file exceptions thereto preparatory to an appeal from the decision of the arbitrators; and the only basis of an appeal is for "error of law apparent on the record."

The right of appeal from the award of the arbitrators is, first, to the circuit court of the United States; and after the decision of the circuit court either party has a further right of appeal to the circuit court of appeals. The only instance in which an appeal has been taken from an award of the arbitrators to the court was in one of the earliest cases of arbitration under this law. In this case, after long litigation, the parties to the controversy reopened direct negotiations with one another and finally reached an agreement, whereupon the litigation in court was abandoned and the dispute was thus finally disposed of fourteen months after the decision had been rendered by the arbitrators.

As was clearly demonstrated in this case, a provision for court appeals in an arbitration act must inevitably either remain a dead letter or defeat the very purpose of the law itself. Arbitration is a quasi-judicial method adopted for the speedy settlement of industrial controversies. Industrial controversies of the kind contemplated in this act as well as industrial controversies in general relate to questions which if they are to be settled effectively must be settled promptly. They cannot be settled to the satisfaction of either side by any such lengthy process as is involved in litigation in one or more courts. This fact was so clearly demonstrated in the case just described that not only has no other case been carried from the arbitrators to the courts, but, on the contrary, practically all of the agreements to arbitrate made since that time have been accompanied by further agreements between the parties to the controversy to waive the right of appeal to the courts and to accept the decision of the arbitrators as final and binding.

CASES OF MEDIATION AND ARBITRATION UNDER THE ERDMAN ACT, JUNE 1, 1898, TO DECEMBER 31, 1911.

	Application.		Railways involved.		Employees involved.					
Case No.	Date received.	Made by—	Name.	Approximate mileage.	Class.	Approximate number.	Represented by—	Date mediation conferences began.	Settled by—	Date mediation agreement was reached.
1	June 23, 1899	Employees.....	8 companies in Pittsburgh district.	.....	Switchmen...	.....	B. R. T.....	.....	.....	.....
2	Dec. 22, 1906	Company.....	Southern Pacific (Atlantic System),	2,350	Firemen and enginemen.	600	B. L. F. & E.	Dec. 27, 1906 Jan. 5, 1907	Mediation and arbitration.	Jan. 7, 1907

CASES OF MEDIATION AND ARBITRATION UNDER THE ERDMAN ACT, JUNE 1, 1898, TO DECEMBER 31, 1911—(CONTINUED).

Application.			Railways involved.		Employees involved.					
Case No.	Date received.	Made by—	Name.	Approximate mileage.	Class.	Approximate number.	Represented by—	Date mediation conferences began.	Settled by—	Date mediation agreement was reached.
3	Feb. 19, 1907	Company and employees jointly.	Southern Pacific (Pacific System).	5,800	Telegraphers.	1,250	O. R. T.	.....	Arbitration	.....
4	Mar. 28, 1907	Company.....	38 Western lines.....	101,500	Conductors... Trainmen.	42,500	O. R. C..... B. R. T.	Mar. 30, 1907	Mediation.	Apr. 4, 1907
5	Apr. 24, 1907	Company.....	Denver & Rio Grande..	2,550	Conductors... Trainmen. Switchmen.	1,200	O. R. C..... B. R. T. B. R. T.	May 5, 1907	Mediation.	May 17, 1907
6	Aug. 3, 1907	Company.....	Colorado & Southern...	1,100	Trainmen....	200	B. R. T.....	.....	.....	.....
7	Sept. 17, 1907	Company.....	Missouri Pacific	6,350	Engineers....	1,150	B. L. E.....	Sept. 20, 1907	Mediation.	Oct. 1, 1907
8	Nov. 20, 1907	Company.....	Missouri Pacific	6,350	Firemen and enginemen.	1,300	B. L. F. & E.	Nov. 26, 1907	Mediation.	Nov. 27, 1907
9	Feb. 25, 1908	Company.....	Southern	7,000	Engineers.... Firemen and enginemen. Conductors. Trainmen. Switchmen. Telegraphers. Machinists. Blacksmiths. Boiler makers. Carmen. Sheet metal workers. Maintenance of way employees.	5,350	B. L. E..... B. L. F. & E. O. R. C. B. R. T. B. R. T. O. R. T.	Mar. 10, 1908	Mediation.	Apr. 1, 1908
10	Feb. 27, 1908	Employees.....	7 Southern roads.....	11,500	Engineers....	2,350	B. L. E.....	.....	.....	.....
11	Mar. 2, 1908	Employees.....	3 Southern roads.....	1,050	Engineers....	300	B. L. E.....	.....	.....	.....
12	Mar. 14, 1908	Employees.....	Chicago Great Western.	1,350	Engineers.... Firemen and enginemen. Conductors. Trainmen. Switchmen.	1,500	B. L. E..... B. L. F. & E. O. R. C. B. R. T. S. U. N. A.	.....	.....	.....
13	July 9, 1908	Company and employees jointly.	Chicago, Rock Island & Pacific.	8,000	Telegraphers.	1,300	O. R. T.....	July 29, 1908 Aug. 12, 1908	Mediation.	Aug. 15, 1908
14	Nov. 19, 1908	Company and employees jointly.	Missouri, Kansas & Texas	3,050	Engineers.... Firemen and enginemen. Conductors. Trainmen. Switchmen.	3,300	B. L. E..... B. L. F. & E. O. R. C. B. R. T. B. R. T.	Dec. 17, 1908	Mediation.	Jan. 1, 1909
15	Nov. 23, 1908	Employees.....	Pennsylvania Lines West of Pittsburgh.	2,900	Engineers....	2,150	B. L. E.....	Nov. 30, 1908	Mediation.	Dec. 4, 1908
16	Feb. 19, 1909	Employees.....	Pennsylvania (Lines East of Pittsburgh).	5,300	Telegraphers.	3,000	O. R. T.....	.....	.....	.....
17	Feb. 26, 1909	Employees.....	El Paso & Southwestern	900	Telegraphers.	150	O. R. T.....	.....	.....	.....
18	Mar. 1, 1909	Employees.....	Pennsylvania Lines (East and West).	8,200	Firemen and enginemen.	7,300	B. L. F. & E.	.....	.....	.....
19	Mar. 12, 1909	Company.....	Texas & Pacific.....	1,900	Engineers....	300	B. L. E.....	.....	.....	.....
20	May 22, 1909	Company.....	Georgia	300	Firemen and enginemen.	80	B. L. F. & E.	May 25, 1909	Mediation and arbitration.	May 29, 1909
21	July 15, 1909	Employees.....	Huntingdon & Broad Top Mountain.	70	Engineers.... Firemen and enginemen. Conductors. Trainmen.	95	B. L. E..... B. L. F. & E. O. R. T. B. R. T.	.....	.....	.....
22	Sept. 15, 1909	Employees.....	El Paso & Southwestern.	900	Trainmen.....	160	B. R. T.....	Sept. 22, 1909	Mediation.	Sept. 25, 1909
23	Nov. 24, 1909	Company and employees jointly.	13 Northwestern roads..	13,000	Switchmen...	2,000	S. U. N. A..	Nov. 29, 1909	.....	.....
24	Dec. 8, 1909	Company and employees jointly.	Illinois Central, Indianapolis Southern and Yazoo & Mississippi Valley.	6,150	Telegraphers.	1,400	O. R. T.....	Dec. 13, 1909	Mediation and arbitration.	Dec. 17, 1909
25	Jan. 6, 1910	Company and employees jointly.	8 Chicago roads.....	14,450	Switchmen...	3,100	S. U. N. A..	Jan. 12, 1910	Mediation and arbitration.	Jan. 19, 1910
26	Jan. 8, 1910	Company and employees jointly.	Cleveland, Cincinnati, Chicago & St. Louis.	2,300	Telegraphers.	1,050	O. R. T.....	Jan. 24, 1910	Mediation and arbitration.	Jan. 29, 1910
27	Jan. 22, 1910	Company and employees jointly.	Baltimore & Ohio Southwestern.	900	Telegraphers.	400	O. R. T.....	Jan. 27, 1910	Mediation and arbitration.	Feb. 17, 1910
28	Mar. 3, 1910	Company.....	Baltimore & Ohio.....	4,400	Conductors... Trainmen. Switchmen.	6,400	O. R. C..... B. R. T. B. R. T.	Mar. 4, 1910	Mediation.	Mar. 11, 1910
29	Mar. 15, 1910	Company.....	52 Western roads.....	110,000	Firemen and enginemen.	26,000	B. L. F. & E.	Mar. 17, 1910	Mediation and arbitration.	Mar. 23, 1910
30	Apr. 6, 1910	Company.....	Southern Ry.	7,000	Telegraphers.	1,650	O. R. T.....	Apr. 7, 1910	Mediation and arbitration.	Apr. 15, 1910
31	Apr. 23, 1910	Company and employees jointly.	Southern Pacific (Atlantic System).	2,350	Telegraphers.	300	O. R. T.....	May 27, 1910	Mediation.	July 15, 1910
32	Apr. 25, 1910	Company and employees jointly.	Seaboard Air Line.....	3,000	Telegraphers.	600	O. R. T.....	May 5, 1910	.....	.....
33	May 31, 1910	Company and employees jointly.	Missouri Pacific	7,200	Telegraphers.	1,050	O. R. T.....	.....	Arbitration	.....
34	June 16, 1910	Employees.....	Gulf & Ship Island.....	300	Telegraphers.	50	O. R. T.....	.....	.....	.....
35	June 16, 1910	Company.....	13 Southern roads.....	19,950	Conductors... Trainmen. Switchmen.	12,500	O. R. C..... B. R. T. B. R. T.	June 16, 1910	Mediation.	July 2, 1910
36	July 16, 1910	Company and employees jointly.	Virginian	470	Engineers....	75	B. L. E.....	July 19, 1910	Mediation.	July 23, 1910
37	July 18, 1910	Company.....	Central Vermont	400	Conductors... Trainmen.	180	O. R. C..... B. R. T.	.....	.....	.....

CASES OF MEDIATION AND ARBITRATION UNDER THE ERDMAN ACT, JUNE 1, 1898, TO DECEMBER 31, 1911—(CONTINUED).

Application.			Railways involved.		Employees involved.					
Case No.	Date received.	Made by—	Name.	Approximate mileage.	Class.	Approximate number.	Represented by—	Date mediation conferences began.	Settled by—	Date mediation agreement was reached.
38	Sept. 20, 1910	Employees.....	Birmingham Southern..	30	Engineers....	37	B. L. E.....	.....	.....	.....
39	Sept. 24, 1910	Company and employees jointly.	Denver & Rio Grande..	2,600	Firemen and enginemen.	570	B. L. F. & E.	.....	Arbitration	.....
40	Dec. 15, 1910	Company.....	63 Western roads.....	115,600	Engineers....	24,600	B. L. E.....	Dec. 17, 1910	Mediation.	Dec. 24, 1910
41	Mar. 4, 1911	Company.....	Denver & Rio Grande..	2,600	Engineers....	570	B. L. E.....	Mar. 10, 1911	Mediation.	Mar. 22, 1911
42	Mar. 9, 1911	Company.....	Cincinnati, New Orleans & Texas Pacific.....	340	Firemen and enginemen.	300	B. L. F. & E.	.....	Mediation.	Mar. 25, 1911
43	Apr. 1, 1911	Company and employees jointly.	Coal & Coke	200	Engineers....	105	B. L. E.....	.....	Arbitration	.....
					Firemen and enginemen.		B. L. F. & E.			
					Conductors.		O. R. C.			
					Trainmen.		B. R. T.			
44	May 27, 1911	Company.....	Southern	7,000	Firemen and enginemen.	1,800	B. L. F. & E.	May 29, 1911	Mediation.	June 10, 1911
45	Oct. 22, 1911	Company and employees jointly.	Baltimore & Ohio.....	4,400	Telegraphers.	1,950	O. R. T.....	Oct. 24, 1911 Oct. 26, 1911	Mediation.	Nov. 7, 1911
46	Nov. 11, 1911	Employees.....	Montpelier & Wells River and Barre R. R.	70	Firemen and enginemen.	38	B. L. F. & E.	.....	.....	.....
					Conductors.		O. R. C.			
					Trainmen.		B. R. T.			
47	Nov. 22, 1911	Company.....	New Orleans & Northeastern, Alabama & Vicksburg, Vicksburg, Shreveport & Pacific	500	Engineers....	160	B. L. E.....	Nov. 27,1911	Mediation.	Dec. 7, 1911
48	Dec. 29, 1911	Company and employees jointly.	Chesapeake & Ohio.....	2,250	Telegraphers.	630	O. R. T.....	Jan. 4, 1912	Mediation.	Jan. 13, 1912

CONTROL OF SUPPLIES BY THE SUPPLY DEPARTMENT.

BY E. T. MC VEIGH,

Storekeeper, Grand Trunk Railway.

In saying that the supply man should have more full and complete control of the supplies, we say a thing that will be scoffed at by all the men who have the idea that *they* are the people who are doing the real things on the railway; and when you come to think of it that means pretty near all of them. To try to make my meaning clear, and at the same time show that there is method in my madness, I will first use the stationery part of the supply department as an illustration.

The executive appoints some individual to the position of stationery agent and keeper of the stationery stock. He receives requisitions for the supplies from the different offices, made up by a junior clerk and approved by a chief clerk or other minor official, who signs them, as a general thing because the office boy has made them ready for him to sign. The name signed or stamped on requisitions is sufficient warrent for the stationery agent to issue material. Outside offices, such as line agents, etc., send their requisitions to trainmasters or assistant superintendents whose clerks sign them, and forward them to the stationery agent for him to fill. In the case of the higher officers the supplies are issued on the judgment of the office boy, and in the case of the line officer or that of the agent himself at very small stations, where he would naturally be a very small man, or on the judgment of the younger member of the staff at larger stations. Oh, yes, I know I have said the line requisitions go to trainmasters, or assistant superintendent, but as not one in ten of the men holding these positions know anything about what quantity of such supplies are required at a station of any given class, and as they leave the approval of the requisition to their clerks, anyway, who know much less about the matter, this leaves the issue of many thousands of dollars' worth of supplies each month to the judgment or caprice of the office boy or junior clerks. Some of you may have noticed that these younger "Jim" Hills are, at times, capricious.

Now, suppose when we appoint our stationery agent we have him inform himself as to who he is supplying with material, have him become acquainted with his road, classify the offices and stations, and let the requisitions go direct to him, let him analyze them, and use his judgment in filling them. Of course all officers and agents would have the right to appeal to higher authority when they felt they were not being treated right; and it would then be up to the stationery man to make good his position, or back down. But we would be getting full returns for the money paid our stationery agent and his staff.

Why should this plan work out more satisfactorily than the one followed at present on most of our larger roads? The present method is something very like what I have outlined above. Even supposing the trainmaster, assistant superintendent or division superintendent has knowledge of the requirements in this line of his line offices, and does give some personal attention to the requisitions going through his offices, he does not keep a record of the requisitions he signs, and can make no comparison between those he signs this month and the ones he signed last month, so he is not in a position to criticize intelligently. Then, any single requisition for stationery aggregates a comparatively small amount in cash value, and a busy trainmaster, or superintendent, with large and important affairs on his mind, must naturally view such things as small and cheap. Even if he has the knowledge he has neither the time nor inclination to go carefully into some thousands of items with a view to saving a very small amount of money. And without records of what has been supplied in previous months he cannot do it intelligently, anyway.

Now, against this plan let us glance at how it could be done by a stationery agent with a proper knowledge of his business. In the first place, this is a matter of first interest to him. It is his business, he knows where his stuff comes from, he has knowledge of its cost, and he is, or should be, deeply interested in where it goes. He has, or will quickly acquire, a general knowledge of the quantities required to run any class of office. He has his records of quantities previously supplied, and can intelligently criticize the quantities asked for, and, knowing that the responsibility is his, he will be careful not only to supply no more than he can help, but to supply enough. Then, the stationery man, having control of the stationery, could make an annual inspection of offices and stations, and collect surplus supplies. And let me ask just here if he came into *your* office on such a quest today would he find anything to take away?

Is there any good reason why this plan would not work out to the satisfaction of all concerned? We have the stationery man; he is paid to look after the stationery; why not let him do it? And is there any good reason why trainmasters and superintendents should relieve the office boy, the agent and the stationery man of responsibility in a matter of this kind? Let the cobbler stick to his last.

As an abject lesson, let me tell shortly of a case that came under my notice a few years ago. A large railway system took

over a smaller road. It was in order for the small road to get in line and use the large system forms. The stationery agent was instructed to send out the necessary supplies, and he took a working time card of the small road, made a list of train stops, and sent to each a full station equipment. Now, this small road ran through a new and unsettled country, and 50 per cent. of the train stops were flag stations, many of them with not even a caretaker in charge. Is it necessary to enlarge on this? And don't blame the stationery man, he was only following along the lines laid down for him. He had never been held responsible for goods *sent out,* that part was up to some one else. Not very clear just who, but not him, anyway. As a matter of fact, he had really never had control of his business, and his company had never made proper use of him.

So much for the stationery part of our railway supplies. But it is after all a simple matter, and easily disposed of compared with general supplies. Just where to begin in dealing with them from the view point of more complete control by the supply men is not clear when you want to say what is necessary, and yet not confuse the issue by a multiplicity of words.

I have in mind a matter that came under my notice in the office of a railway storekeeper a few weeks ago, and it might be considered to have a bearing on the case. There came to the storekeepers' desk a requisition form filled out in lead pencil. On looking it over to see what it called for the storekeeper found this.

"To Mr. J. Doe.
"Dear Sir:—
"All culverts and bridges on my district O. K. at present time.
(Sgd.) J. Smith, Foreman.

"Approved,
"R. Roe,
"Superintendent."

The real names are not given for reasons easily understood. It was evident that Foreman Smith was a little shy on note paper, and had sent his report in on the paper he had. But it happened to be a requisition form, so the superintendent's clerk promptly "approved" it with the name of his chief, and sent it on to the storekeeper.

My reason for relating this little incident is that it seems to me to throw a side light on the value of the approval of requisitions by officials other than the maker of them. Any railway storekeeper could show scores of requisitions where the "approval" means just as much, and as little, as in the case cited. But the storekeeper, like the stationery agent, has no option but to send out the material called for. Now, what are we going to do? The railways have, and pay for, a supply department, but that department has no authoritative control over the supplies other than to procure and hand them out on requisitions approved much like that we have glanced at. Yet we must have them approved by some one, or so we honestly believe.

These things are problems of vast importance, for they deal with money value that runs into many millions, and knowledge that will help solve them is of value and heartily welcome. Mere criticism without suggestions as to improved methods is cheap, and of small value. The larger the railway system the greater the problem, and a method that might greatly reduce the problem on a small road might be of little real value on a larger one. There came under my notice a few years ago an attempt to secure better control of supplies, and it may be worth setting down. The railway in question was a small one, under a thousand miles long. The general manager was naturally in closer touch with details than would be the manager of a larger road, and he became very much dissatisfied with his supply methods. So with a view to improving them he appointed a general storekeeper, giving him full charge of all material and supplies, including stationery. The man he appointed was one thoroughly familiar with the road, he knew personally every agent on the line, and had a general knowledge of the volume of business done at each station. And he also knew the shops, and had good knowledge of the work done in them. His first move after his appointment was to go to his manager with this proposition: No material or supplies of any kind were to be ordered than from his (the storekeeper's) requisitions. All requests for materials and supplies were to come to him, no matter by whom originated, or by whom approved. The storekeeper's requisitions would be divided into two classes, A and B. On the "A" requisition would appear all of the material and supplies that the storekeeper had positive knowledge were required for the economical operation of the road. This requisition was to be passed on to the buyer at once, and the items ordered, the storekeeper to be held strictly responsible for each and every item, his half yearly inventory, and bills payable, to be the criterion of business done.

On the requisition "B" would appear all items that the storekeeper had not positive knowledge of, such as new machinery, equipment, rails, ties, new bridge material, material for new buildings, furniture, etc., and this requisition would remain on the general manager's desk for his careful consideration, and none of the items would be ordered until authorized by him. The storekeeper would, of course, handle such material when ordered, but would not be held responsible for its purchase.

The idea was to relieve the general manager from the necessity of attempting to pass judgment each month on the thousands of items of miscellaneous supplies that must be purchased, but leave such items as he could hold up, if so disposed, in a form that would enable him, in the least possible time, to judge intelligently of them.

The general manager finally adopted this plan, and I have before me some figures dealing with the business done under this arrangement. These figures were obtained from the auditor of road in question, and show, among other things:

1. That the stock of stationery on hand was reduced 5 per cent. and held down to the new basis for six years.

2. That the general supply stock on hand was reduced to $200 worth per mile of road operated, and held at that.

3. That the store's cost of ordering, receiving, caring for, distributing in detail, and accounting for supplies was 1⅞ per cent. on value of issues.

There are many other items of information all tending to a good showing, and I have heard railway men and others, credit this road with a high degree of efficiency. This was only a small road, and, of course, we on the larger systems claim that it is impossible to conduct our business on any such plan as that hinted at here. But is this true? We are leaning more and more each year to the divisional plan of organization in everything except the supply departments, and there are many reasons given why it cannot be applied to it. But is there any good reason why the divisional storekeeper should not have complete control of all the material and supplies, other than stationery and fuel on, coming on, and going off his division?

It has been laid down as a rule that all buying and selling for the company, or of its material, shall be done by the purchasing agent, who has been appointed for that purpose. It was realized early in the game that it led to confusion, and left the door open to loss in many ways, to allow persons other than those to whom it is their first care and business to either buy or sell. To that extent, and at that end, the supply department has control of its business. Now, the buying and selling is but one step, and not the most important step, in this matter. The deciding on the best thing required for a given piece of work, the listing of the thing intelligently, the receiving, inspecting, taking care of, disbursing, and accounting for it, are many steps, each of them of great importance. Each of these, with the exception of the first, and even that half the time, are functions of the supply department man, and are performed by him, but there has grown up on our larger roads a system, or plan, whereby a large percentage of the supplies and material are removed beyond the control of the supply men before it is actually put to use, and this we claim is not good business. At one end we have complete control, at the other, and perhaps the most im-

portant end, we have not. It is true that this plan relieves us of much responsibility, but we are not here to shirk our responsibility, we do not ask to be relieved of it, and the object in creating the supply department is, to an extent, defeated when we are so relieved. We fully appreciate the importance of having small stocks of supplies at points other than headquarters and the economy of having them looked after by the clerk of the foreman in charge, rather than appointing a special man under the supply department to do so, as the clerk will be there anyway. But we do claim that the supply man on that division should not lose general jurisdiction over these supplies, no matter under whose nominal control they may be, even if, as a matter of bookkeeping they are written off into a sub-stock. That there are men outside the supply department who desire that they should be removed from, and remain outside of, the supply man's jurisdiction, is a good and sufficient reason why they should *not* be so removed. The man who does not like to be watched at his work is just the man the foreman must keep his eye on.

Let me cite a case in point. On a certain road the supply man found that a department had, without good and sufficient reason, increased the quantity and value of the material and supplies on hand for the use of that department something over 100 per cent. These supplies had been written off to the department sub-stock and were no longer under the supply man's control, but in the general interest he called attention to the condition, and the matter was referred to the head of the deparment. The action of the storekeeper was resented, he was accused of attempting to exceed his authority, the material was scattered out of sight, and the storekeeper only succeeded in making a few enemies for himself. The evil gains a footing through allowing it to be understood that unused material may be removed from the supply man's jurisdictions. We have the car man to look after cars; enginemen to look after engines; trackmen to look after track, and so on through the whole organization. They each do their own work, and help each other when such help is necessary, but they are each held responsible for their own part, from beginning to end. Could they be held responsible if they did not have complete control? And could any management hope to get satisfactory results with anyone of them doing independently a portion of the work for which the other is paid and held responsible? I think not.

The question is, are our railways today making the best use possible of their supply department organization. For, after all, a department is created and maintained to help either to save, or make money. Are they taking full advantage of the supply man's local knowledge of requirements, and his natural conservative interest in supplies, or are they disregarding him, and destroying his interest in the economical supplying of material by making him simply a bookkeeper, and a medium through which the departments will secure what they think they want on requisition "approved" in the manner hinted at here. I claim that they are doing this, and losing money by so doing.

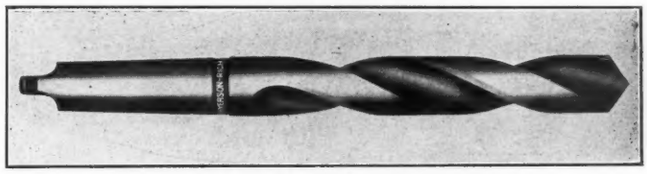
The storekeeper should be given the right to criticize all requisitions and refer them back, he should be encouraged to do this. I am writing of regular supplies now, not cases of emergency. Most storekeepers know what an emergency is about as well as other officials. And his reports of excessive quantities used receive proper attention, not merely referred to the head of the department in fault and pigeon-holed by him. If the storekeeper goes too far along these lines he will soon be tripped up; but when he has the right to do these things, such action on his part will not be resented as merely "butting in," and it will have a tendency to make every one more careful. When the maker of the requisitions knows that while it is easy enough to get his requisition "approved," as it is now, it must also pass the criticism of the man who supplied him with the last lot, he will be careful not to make his requisitions excessive.

Water will find its level, and in reaching it, it flows along the line of least resistance, and man, being 75 per cent. water, is prone to do much the same thing. And today on many of our railways there is an unwritten understanding that the storekeeper will refer back, but he is not given the *right* to do it. To what extent he will do it, and what success he meets with in doing it, depends on the friendly feeling there may happen to be between him and the superintendent, trainmaster, master mechanic, and many others. But this is not right. Friendliness of this kind will either wear thin in spots, or degenerate into that good fellowship that will sacrifice the company's interest, rather than question the action of a "good fellow." The storekeeper cannot afford to be called a "good fellow" in that sense, and it is a poor foundation on which to build, in conducting either your own or the company's business.

I am fully aware of the fact that in advocating increased work and responsibility for the men of the supply department, I may not please some of the "weak sisters." It is much easier to jog along letting anyone who will do a portion of our work, no matter who pays; but this question is bigger than either individuals or departments. It concerns the railway as a whole, and we must try to grow big enough to consider the whole.

FORGED HIGH SPEED TWIST DRILL.

In recent years there has been a decided change in drilling methods and large economies have resulted from these improvements. Slow drilling has been superseded by high speed drilling, which has increased the output; but it is desired to increase the feed of the high speed drills in order to produce an economical combination giving a still greater output. The new high speed forged drill which has been placed on the market by Joseph T. Ryerson & Son, Chicago, and called the Ryerson-Rich drill has been designed to give such service. It is made of hammered or forged steel and a ⅞ in. or 1 in. drill will run at 250 r. p. m. with twice the allowable feed of the common type of high speed drill running at 400 r. p. m. The history of the development of this new drill is interesting. The first high speed drill was made of plain flat steel and was used principally for drilling rails. This was a decided step in advance, but it was necessary to use a bushing to center the drill in the chuck, and a separate bushing was used for each size of drill. This objection was overcome by making



Ryerson-Rich Forged Twist Drill.

a flat bitted drill which fits in grooves and in the jaws of the chuck and does away with all of the bushings. This was successful and is still in use. The flat twisted drill was next made and it met with similar success on account of its low cost and strength as compared with the other types. This was found suitable for rough work, but did not permit drilling to exact size. After many experiments and developments the new forged drill was designed and seems to answer all the requirements. In making this drill the forging is the new and important feature. Most bar steel contains poor material at the center and this is usually the cause of the drill breaking and splitting. To eliminate such flaws the new drill is hammered or forged to shape and provides a more homogeneous structure.

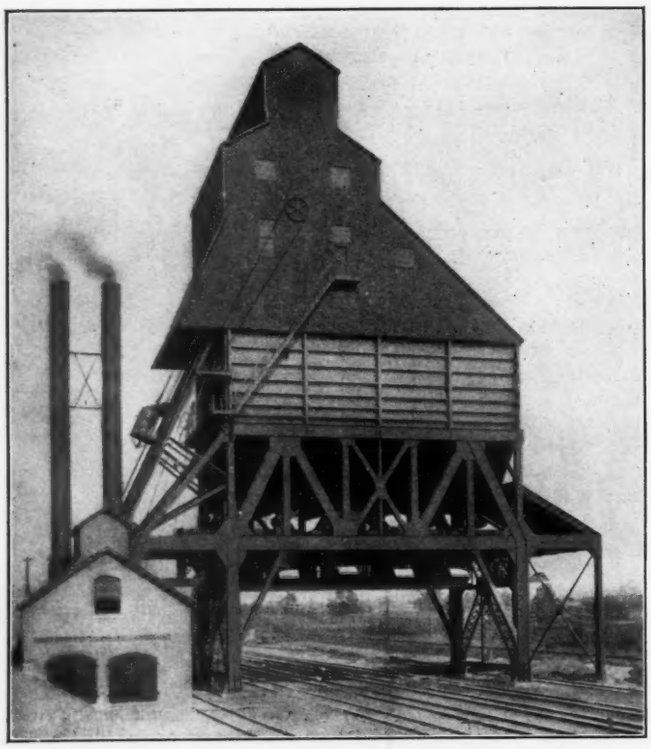
The objections to ordinary drills are as follows: First, many drills, if run above a certain cutting speed, will heat and lose their temper, no matter how carefully the lubricant is applied; second, it is impossible to drill hard material without continually regrinding the drills, causing a loss in the capacity of the drill press and increased expense for labor; third, the loss due to splitting up the center; fourth, loss and inconvenience

are caused by twisting off the tang on the taper shank. The new drill tends to overcome these faults. It has the same general shape and cross section as the milled twist drill now so generally used and which has the best cutting qualities and has the strength of the forged drill. The advantage and economy of these drills have been shown in numerous tests, and the following gives the general results of such tests:

Six 13/16-in. drills bored 40,000 holes through structural built-up girders measuring from 1 in. to 2⅝ in. thickness and were still in good condition. One 2½-in. drill bored three holes through a .40 per cent. carbon steel block 8¾ in. thick in seven minutes. One hundred and sixty 9/16 in. holes were drilled in a 3-in. angle iron in one hour without using oil or water and without the drill being sharpened, and when done the drill did not show unusual wear. A ¼-in. drill made 500 holes through a ¾-in. steel bar without being sharpened, while it was necessary to sharpen the ordinary twist drill after 55 holes had been drilled. A 15/32-in. drill made 100 holes through a hard casting without being sharpened, while other drills only bored 25 holes. The new drill was forced in the effort to break it, but its cutting power exceeded the capacity of the drill press, and it bored 31.4 ft. of rather hard steel without being reground. These drills can be furnished with regular taper shank or one size larger if desired.

COALING STATION FOR THE LAKE SHORE.

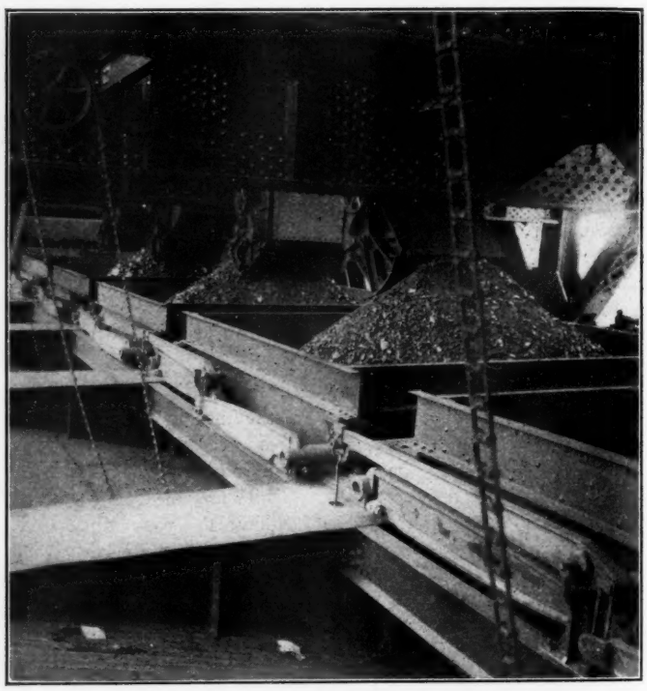
The Lake Shore & Michigan Southern has recently built a locomotive coaling station of large capacity at Wesleyville, Pa., three miles east of Erie. It spans six tracks, four of which are main tracks; the other two, located on each side, are sidings. Each of these sidings has a cinder pit 100 ft. long, with depressed



1,800-Ton Coaling Station; Lake Shore & Michigan Southern.

tracks for loading the ashes. Two water columns are located on either side of the coaling station, making a convenient arrangement for cleaning, watering and coaling the locomotives. The coal is delivered from the cars on two elevated tracks into a hopper 44 ft. long and 28 ft. wide at one side of the station. From this hopper it is conveyed by means of automatic measuring feeders, to two independent counterbalanced skip hoists, which have buckets of 3 tons capacity. These buckets are hauled up a steep incline, as shown in the illustration, by two steam driven hoists operated separately. The hoists automatically slow down and stop when the buckets reach the loading points. As they are operated separately there is less danger of a shut down, for if one should be out of commission the other would deliver sufficient coal for the locomotives.

The buckets deliver the coal at the top of the tower and there it passes over a screen which allows the small coal to pass through and guides the large lumps to a two-roll coal crusher, which reduces them to standard size. The coal is distributed to the main storage bins by means of chutes and a by-pass is provided so that when handling small coal it is not necessary to pass it over the screen. The main storage pocket of the station holds 1,800 tons and the coal is drawn from it through under-cut gates leading to 15-ton weighing hoppers over each track, from which it is delivered to the locomotives by means of chutes. The hoisting plant is capable of handling 350 tons of coal per hour. This station was constructed under the supervision of the engineering department of the road, the Link Belt Company of Chicago being in charge of the design and installation of the machinery.



Weighing Hoppers for Coaling Station.

The great advance in the price of oil in Russia has led to a change in the fuel of Russian locomotives. It will be remembered that when the disturbances took place in Baku in 1905, and the price of oil rose to an extraordinary height, the railway companies that had been using oil fuel or ostatki found themselves compelled to turn to the coal of the Donetz basin. Then, however, as a more normal situation began to obtain on the oil fields, the railways, along with other consumers of fuel, began to return to oil again, the price of which had declined to a more normal level. But the fact that is being borne in on Russian economists is unmistakable—that the oil wells of Baku are giving out, and the seriously reduced output last year caused prices of oil fuel to rise again. The prices are now something like 75 per cent. more than the prices of last year. Most of the railways have once more gone back to coal. It is a significant fact that the Caucasian Railway which carried immense quantities of liquid fuel along its own line should find it better and cheaper to use coal than to use the liquid fuel of the district through which it runs.

General News Section.

The Intercolonial is to put collectors on its through passenger trains.

The New York state highway commission at sessions at Albany April 15, 17 and 19 expects to open bids for the construction of 358 miles of roads at the estimated cost of $5,000,000.

A bill has been introduced in the legislature of Rhode Island, and passed by the lower House, providing for the establishment of a public service commission, with plenary powers, such as are now possessed by the commissions of Connecticut, New York and other states.

Judgments amounting to $1,575 have been entered in the federal court against the Denver & Rio Grande for violations of the hours of service law, and judgments for violations of the safety appliance law against the Pere Marquette for $1,500, and the Minneapolis & St. Louis for $200.

The lower house of the New York legislature has adopted a resolution looking to the amendment of the constitution of the state so as to empower the legislature to enact laws for the payment by employers, or by employers and employees jointly, of compensation for injuries to employees.

The Long Island Railroad, during the month of February, ran 18,671 passenger trains, of which 95 per cent. reached destination on time, or not more than five minutes late; and the officers of the road think that, in view of the severe winter which prevailed throughout the month of February, this is a unique record.

The Interborough Bulletin, a monthly periodical published by the Interborough Rapid Transit Company, New York City, for the benefit of its employees, fills two pages of its March issue with copies of letters received from passengers commending trainmen and stationmen for courtesy, honesty and careful attention to their duties—20 letters in all.

The Chicago, Rock Island & Pacific in making its spring readjustment of passenger train schedules, has taken off several trains, thus effecting a small economy in mileage. Among the trains discontinued is one leaving Chicago daily at 3:10 p. m. for Davenport, La., two trains between Estherville, Ia., and Sioux Falls, S. D., and two between Vinton, Ia., and Iowa Falls.

It is not on large railways alone that "Safety Committees" may be useful. The Jonesboro, Lake City & Eastern, we are informed, has inaugurated a general safety system over its lines "whereby better care is to be taken of the life and comfort of the company's patrons." The J. L. C. & E. runs from Jonesboro, Ark., to Barfield, 66 miles, with two branches aggregating 45 miles.

J. S. Dennis, president of the Canadian Pacific's land company, estimates that 200,000 Americans will go from the United States into Canada to settle there in 1912. He says that land in the irrigation block, which is selling at present at $30 an acre, will be selling at from $35 to $55 an acre. He says that about 250,000 acres of irrigable lands in the eastern block will be placed on the market this season.

The Marconi Wireless Telegraph Company, of England, announces that a contract has been made with the British post office department for the construction by the Marconi Company of the long distance wireless stations which are contemplated under the "Imperial wireless" scheme, under which the British government contemplates a wireless telegraph system extending around the world. Work will be begun at once on the erection of stations at London, Aden, Bangalore, Pretoria and Singapore.

The passenger station of the Missouri, Kansas & Texas at Parsons, Kan., was completely destroyed on the evening of March 18 by a fire which was believed to have originated in defective electric wires. The building was 60 ft. x 260 ft., three stories in height, the upper floors being occupied by the offices of the company. A large number of records and papers were lost, but the permanent records were kept in an adjoining building and were saved. The loss is estimated at $200,000.

The Chicago General Managers' Association has recommended to all of the roads entering Chicago a plan for posting notices in all passenger stations, baggage rooms and other railway properties, warning passengers against the danger of carrying explosives in satchels, trunks or other baggage. The notices are to be printed in several languages, and cite a provision in the federal law imposing a penalty of a fine of not over $2,000 or imprisonment for not over 18 months, or both, for carrying explosives in passenger trains.

The proposition before Congress to amend the Erdman law, so as to provide for governmental conciliation in disputes between employers and employees in the coal mining industry, has now taken the shape of a bill empowering the President of the United States to inquire into the facts whenever there shall be a dispute over wages, hours of labor, or conditions of employment [in any industry] affecting the free and regular movement of commerce among the states. The purpose of the bill is to provide for the creation of a commission in such cases when that shall be found desirable.

In Canada a legislator or government officer whose love for the labor unions governs his public acts makes no bones of saying so, or, at least, letting the fact be known. A press despatch from Ottawa this week says: "Ministers of Labor and Railways are holding up the financial legislation required by the Grand Trunk, in order to force the company to reinstate the strikers who quit work in July, 1910, and who have not been taken back. The bill under consideration amends the Grand Trunk Pacific act and authorizes the issue of $25,000,000 in debentures for the completion of the Grand Trunk Pacific.

The New York State Public Service Commission, First District, has sent to the Interborough Rapid Transit Company an order requiring emergency lighting apparatus to be maintained in the subway cars; also to provide independent illumination in the stations. The purpose of this order is to guard against the complete darkness which has resulted in cases where the power current has failed. The requirement is that there shall be a storage battery, or other suitable provision for maintaining at least two lamps in each car. The lamps must be instantly and automatically lighted whenever the regular lamps fail.

On Thursday afternoon, March 21, a street car arrived in New York City (129th street, Manhattan) direct from Boston in 33 hours—about 12 hours of which was spent in New Haven, where the passengers slept at a hotel. The trip was made by a party of street railway officers. The route was by way of Worcester, Springfield and New Haven. Between Darien and Stamford a short piece of temporary track had to be laid to enable the car to come through. Passengers have made this trip by trolley car occasionally for a number of years past, but never without bridging short gaps by steam cars or by private conveyance.

A bill has been introduced in Congress by Senator Clapp, of Minnesota, chairman of the Interstate Commerce Committee, to impose a penalty of $200 on railways not settling freight claims promptly. It is said that the bill was drafted by the Interstate Commerce Commission and that it was presented at the request of President Taft. The bill applies not only to loss or damage of freight, but would punish for delays in transportation and for unlawful discrimination in furnishing cars. The penalty applies in case a claim is not settled within six months after the carrier is held legally liable—which apparently may be interpreted to mean six months after the termination of a law suit. In ordinary cases a road is allowed 90 days in which to settle a claim; if the shipment went over the lines of two or more carriers, 30 days may be added for each carrier; claims on shipments to or from points outside the United States, six months.

A new plan for the proposed contract with the Illinois Central for exchange of property in Chicago with the board of South Park Commissioners in order to provide for the carrying out of the city's plan for lake front improvement and the erection of a new passenger station, has been submitted to the Chicago

city council committee on harbors, wharves and bridges by a committee of citizens, including representatives of the City Club, whose opposition led to the rejection of the original plan. The citizens' committee asks that negotiations be resumed with the Illinois Central on a basis providing for the depression of its tracks on the lake front, the electrification of the passenger terminals within a period of five to eight years, a reduction of the amount of land to be granted to the Illinois Central, and a change of location of the proposed passenger station from Michigan avenue and Twelfth street to Indiana avenue and Twelfth street, to permit the extension of Indiana avenue north to Twelfth street.

Disaster in the Berlin Subway.

On the morning of March 27, an extension of the underground railway of Berlin, Germany, which is being pierced beneath the river Spree, to reach the northeastern part of Berlin, was flooded with water from the river, by an accidental break, and 80 workmen in the tunnel barely escaped with their lives. A large section of the existing subway was flooded so that traffic will be suspended probably for a month. The damage will amount to several millions of marks, and the completion of the extension will be indefinitely postponed.

The Coal Strikers.

The British government continued up to Wednesday of this week its efforts to bring about an agreement between the coal owners and the miners, but the result was utter failure. The government then at once proceeded in Parliament to secure the passage of its law providing for a minimum rate of wages, and it is expected that by the time these lines reach the reader that law will have received the royal assent. The proposed law is admittedly unsatisfactory to both sides, but is going through without serious objection, because of the desperate situation. On Wednesday there was serious violence at Cannock in Staffordshire, where 80 men were at work in a mine. It is said that the coal owners have resolved to accept the proposed law and that the mines will be opened, probably next week. Considerable numbers of miners, though but a small proportion of the whole, have expressed a willingness to go back to work, and it is expected that the pressure will soon be relieved. A few mines have already resumed. Poverty and destitution have become widespread, not only among the miners, but in other industries, and distress will continue for a long time. On Monday last it was announced that the railways were preparing to suspend all trains on the less important branch lines. In London there were large reserve stocks of coal on hand, but elsewhere the scarcity was universally felt. At Newcastle the price has risen to more than $20 a ton. One colliery in Yorkshire sold to the Cunard company 50,000 tons at $8.50 at the pit, more than three times the usual price. Ocean steamships usually coaling at English ports have bought hundreds of thousands of tons elsewhere. Well-informed statisticians have estimated that the strike is costing the United Kingdom ten million pounds ($50,000,000) a week. The funds of the miners' unions are becoming rapidly exhausted.

The deadlock between the anthracite miners of Pennsylvania and their employers continues, and the latest despatches from the mining regions say that the men are bringing their tools out of the mines with a view to stopping work on the first of April.

At Cleveland, Ohio, negotiations are going on between the bituminous coal operators and their employees, but no definite results are reported.

The Beneficent Sherman Law.

"Has the Interstate Commerce Act so eliminated competition between carriers as to justify exempting them from the Anti-Trust Law?"

"No. Undoubtedly the greatest restraint ever placed upon *competition* in this country is the compulsory uniformity of railway rates, for your competitor knows thirty days ahead what your rates are to be. After years of experience with secret rates, midnight tariffs, and rate wars, the common cry of the traders was for stability of rates, and that stability has not restrained trade. All any fair man wants is to be on an even keel with his competitor under similar circumstances and conditions, and he will go on trading to the best of his ability. But, quite independent of the Interstate Commerce Law, the Anti-Trust Law works in a beneficent way because, if it is observed, there is no restraint upon quantity or quality of service. Every wisely managed railway is trying to build up its own territory, and, however much might be saved by adopting the very consistent French monopolistic method, the advantages of retaining competition in quantity—increasing capacity—and quality are most valuable assets for a growing country."—*Frank Trumbull; Interview in The Outlook.*

The Vermonters.

Governor Grout has said that there is no place on earth so unheard of or so remote that you won't find there at least one Irishman and one Vermonter. Next to being a Vermonter and living in Vermont, the best thing in the world is to hail from Vermont. Ever since our little state ceased, in 1792, to be, as she then was, a world power, Vermonters have always been in demand for odd jobs of all sizes. Hundreds, yes, thousands of Vermont men serve the public by managing the industrials and the railways—Daniel Willard of the B. & O.; J. H. Hiland of the C. M. & St. P.; Maxwell Evarts of the Union and Southern Pacific, to name but a few of them. But for twenty-five years these men and their fellows and predecessors have not really managed their railways. They have been answerable to the Interstate Commerce Commissioners, one of the ablest of whom is before you as I speak [Chairman Prouty]. But mark well this further fact: the Interstate Commerce Commission has uninterruptedly had a Vermonter on it since its work began. Thus the making of rates has never lacked a Vermonter to supervise and control it.—*Robert Walker, at Dinner of Vermont Society, New York City, March 23.*

Canadian Railway Subsidies.

The Canadian Government has laid before Parliament its budget of transportation aid in the form of railway and bridge subsidies for the current year. It amounts to $22,927,200. Subsidies are proposed for 3,433 miles of railway, the construction of which, at the maximum aid of $6,400 a mile, will call for government aid amounting to $21,971,200. Bridge subsidies amount to $956,000. Of the total railway mileage subsidized, 1,882 miles represent renewals of former votes, the subsidy amounting to $12,044,808. New lines total 1,551 miles, subsidies $9,056,400.

Safety Committees on the Pennsylvania.

There are now thirty-three safety committees at work on the several divisions of the Pennsylvania, consisting of from three to eight members each, making a total of 148 men in all. There are separate road, shop and yard committees on the larger divisions; road and shop committees on the intermediate sized divisions, and separate shop committees at the larger shops; all other divisions have a single committee. These committees report monthly to their superintendents. The general superintendents submit quarterly reports to the general manager.

In the early stages of safety committee work, monthly inspections were made by the committees, but the officers are now considering the advisability of having some of the committees make quarterly inspections, and are also considering the advisability of a longer period of service on the committees (longer than two months). The membership of each committee includes representatives from the motive power and the maintenance of way departments and of the department for conducting transportation. The committees have received suggestions from many employees, in addition to making their own observations. They make a monthly inspection in a body, covering all points on which recommendations are offered, and compile the report from their findings. A representative from the general manager's office and a representative of the Insurance department, are engaged in visiting the divisions and personally inspecting those points at which recommendations have been approved, but not yet carried out, and in securing the views of the general superintendents as to the most practical form of report. The committees appear to be working satisfactorily, and the results show a marked decrease in the number of accidents, especially in the shops, where the number of serious injuries to employees decreased more than 63 per cent. from January 1 to November 1, 1911.

U. S. Steel Corporation Sells Bonds.

The United States Steel Corporation has sold to J. P. Morgan & Co., New York, $30,500,000 5 per cent. bonds. In connection with the new bond issue E. H. Gary, chairman of the board, says:

"As authorized by the unanimous vote of the members of the board of directors, and not including any member of the firm hereinafter mentioned, the United States Steel Corporation has sold to J. P. Morgan & Co. $30,500,000 bonds on a basis of 5.1 per cent. rate of interest.

"The amount will include $15,000,000 secured on the Indiana Steel Company plant at Gary, Ind., $10,000,000 on the Lorain Steel plant at Lorain, Ohio, and $5,500,000 debentures on the Illinois Steel Company, being part of an issue heretofore authorized.

"As there must be expended during the year about $20,000,000 for extensions of properties generally, heretofore authorized, and as about $17,000,000 additional working capital is needed in consequence of the increased business of the companies, particularly in the ore department, it has been thought advisable to secure the sum named by the sale of bonds in order to keep the amount of cash on hand up to the sum shown at the beginning of calendar year.

"In view of the fact that very large sums have heretofore been appropriated from net earnings for capital expenditures, it has been decided to finance some of the capital expenditures as above stated."

Harvard to the Hub, Eight Minutes.

The title of this paragraph has been evolved for the purpose of celebrating the completion of the subway from Tremont and Park streets, Boston, to Harvard Square, Cambridge, about three miles. The line was put in operation last Saturday. From the Boston terminus it runs about half a mile beneath Beacon Hill, then across the Charles River on the new Cambridge bridge, and thence about 2¼ miles underground in Cambridge. The cars are 70 ft. long. The work on this road was begun in 1909. It is called the most adequately equipped and most artistically planned institution of its kind, the engineers and builders having availed themselves of the experiences of New York, London and Paris, as well as of the lessons of Boston's experience with her other tunnels during the past 20 years.

Rail Conference in New York.

On March 21, representatives of the rail makers met in conference with members of the executive committee of the American Railway Association to discuss means of improving the quality of rails. The meeting resulted in no definite action, aside from the decision to appoint a joint committee to make further studies. President Willard, of the A. R. A., who presided, made the following statement after the meeting:

"A full and frank discussion of the question relating to the character and wearing qualities of rails was had, and the opinions of experts received and considered. The questions of mill practice in manufacturing rails and usage of the rails in tracks were discussed, and it was conceded that improvements can and ought to be made by both sides. Every reasonable effort will promptly be made in this direction.

"Important facts were gathered together, and much benefit will be derived as the result of the meeting. Before adjournment a sub-committee of six was appointed, consisting of three representatives of the railway companies and three representatives of the manufacturers, to consider the whole subject matter and report their conclusions and recommendations at a future meeting to be called by the chairman."

Who Said Car Surplus?

Canadian railway companies are refusing to supply cars for the export of hay, pulp, paper and other commodities into the United States on the ground that once their cars get south of the border it is next to impossible to get them back. G. S. Cantlie, head of the car distributing department of the Canadian Pacific, tells the Dominion Railway Commission that since November last the Canadian Pacific has lost 6,000 cars to United States roads. If the present tendency of American lines to pool their cars becomes more pronounced it will not be long before all Canadian equipment will be across the border. Other railways make similar complaints. It is estimated that one-third of the entire equipment of the Intercolonial Railway is now being used by American roads. The railways in the United States have to pay 30 cents a day for each car delivered to them, but evidently they think them cheap at the price.—*Press Despatch from Montreal.*

Improvements on the Denver & Rio Grande.

E. T. Jeffery, chairman of the board, in speaking of authorizing an issue of $25,000,000 7 per cent. adjustment income bonds, said: "Subject to the stockholders' approval, $10,000,000 of these bonds will be offered for subscription to stockholders between May 11 and June 1 at par and accrued interest, in proportion to their holdings. Payments may be made in four instalments, the first on subscription and the remaining three of 25 per cent. each upon August 1, September 3 and October 1, 1912, with accrued interest.

"Proceeds of these $10,000,000 bonds will be used to construct a detour line, 14 miles, from Soldier Summit to a point near Tucker, with a maximum grade of 2 per cent. against the existing grade of 4 per cent. and to continue this detour line as a second track westerly 16½ miles to Thistle at not exceeding the maximum grade. This detour will save about $490,000 in operating costs per annum. A second main line track will also be constructed from Thistle to Midvale, 54 miles, and from Castle Gate to Kyune, 7½ miles.

"When these improvements are completed the company will have a double track line from Helper, in the Utah coal fields to Salt Lake City, 115 miles, which will greatly facilitate transportation on the part of the railway where traffic is now seriously congested. These improvements will cost $3,700,000 and will effect a saving of about $600,000 per annum in operating costs.

"About $2,500,000 will be expended for new equipment and locomotives, which will result in an increase of revenue of not less than $500,000 per annum. It is proposed also to set aside $2,500,000 of the proceeds of the bonds to acquire obligations of the Western Pacific Railway. A portion will be used by Western Pacific to apply on payment of first mortgage bond interest. The remainder is to be used for important improvements on Western Pacific, including completion of low grade line, 145 miles west of Salt Lake City, and the company's shops at Sacramento."

Negotiations with Eastern Enginemen.

On March 25, the Conference Committee of Managers, representing 50 roads in eastern territory, made its formal reply to the proposals of the enginemen for an increase in wages and standardization of wages and working conditions. It is said that it was impossible to grant the requests, the present rates of wages being, as a rule, full and liberal, and the railways being unable to bear the increased expense involved. On the same day, Grand Chief Stone replied, saying that this decision could not be accepted, and that the representatives of the enginemen reaffirmed their request of January 23; he further said that if the Conference Committee had nothing further to offer the question would be submitted to the enginemen employed on the various roads for their final action. To this the Conference Committee replied that it could add nothing to the facts set forth in its previous letter, that it had hoped the enginemen would recognize the gravity of the situation confronting the railways and their inability to meet the enginemen's requests, and further said that it trusted the matter would be given full consideration when the entire question was submitted to the enginemen at large for their final action.

Arrangements are being made for taking a strike vote. On April 10 the representatives of the Brotherhood of Locomotive Engineers will again meet in New York to consider the situation, and, in the event of a repetition of the refusal of the managers to grant the demands, to decide whether to strike (if the results of the vote so authorize them) or to invoke mediation under the Erdman law.

The reply of the Conference Committee, referred to above is, in part, as follows:

"The railways represented in this district are fifty in number and carry about one-half of the passenger and freight traffic of the United States. The proposed increase in wages and changes in working conditions would increase the pay of engineers of the

railways of the eastern district for the service now being rendered, by the following amounts per year:

Passenger service	$1,253,537
Freight service	3,578,392
Switching service, including belt	1,052,303
Terminal delay	804,155
Other working conditions	865,406
Total increase	$7,553,793
Percentage increase	18.63

"This increase would be equivalent to placing on these properties a lien of $188,844,818 of 4 per cent. securities, which would have preference over first mortgage bonds, and to just that extent would lessen the ability of the roads to make the improvements necessary to increase the efficiency of their service, and to insure greater safety to the public and the employees.

"Already the traffic of a growing country has over-taxed the existing facilities; and the heavy burdens incurred through legislation, the large expenditures for improvements which produce no revenue, and the previous wage increases, have made it impossible for many of the roads to raise money to provide the added facilities which a prudent foresight demands.

"Past history indicates that if these increases are given to the engineers they will be followed by similar requests from other employees, which, if granted, would result in actual bankruptcy to some of the roads, and would leave them as a whole unprepared to meet any sudden increase in the demands for transportation.

"The wage advance to engineers and other employees in 1910 was made in expectation of a much needed advance in freight rates which the Interstate Commerce Commission declined to allow. Enforced reductions of rates have been more or less continuous since that period, and many important rate reductions are now pending, the latest decision being in the Pittsburgh Lake Coal case, requiring an average reduction of 10.0476 cents per ton in the freight rate, which will directly affect over 21,000,000 tons of coal per year, and the general effect upon freight rates on fuel and commercial coal will be far reaching.

"It is less than two years since the last adjustment of engineers' wages was made in the eastern district, which resulted in an annual increase of engineers' pay amounting to $3,923,681, or 10.73 per cent. per year. In this adjustment, all conditions of the service then prevailing were considered and provided for, and, since that time, there has been no substantial change in these conditions.

"The conductors and trainmen have standard wages as a result of the crisis developed in connection with their demands, which were finally disposed of by mediation and arbitration; not that the railways were satisfied with the standard scale, but because of the conclusions reached by the arbitrators. The fact that another class of employees has through stress of circumstances secured a standard wage in a certain territory does not make it right. There are many inconsistencies in a standard wage that should be carefully considered. It must be apparent that all railways are not equally able to pay a standard rate, and it would be manifestly unfair not to recognize the dissimilar working conditions existing on the different roads and the different parts of a system, and the marked variation in earning capacity which governs their ability to pay wages.

"The ability of the railways to meet the recurring demands for increased wages is measured by the net results of their operation and the sum of the obligations which they must meet to maintain their solvency. The reduction of the net revenues by the constantly increasing expenses of operation have so narrowed the margin which is essential to the solvent existence of many of the roads that further increases in operating costs are viewed with grave concern. To illustrate the tendency in this direction during the past two years, the following figures from the reports of the Interstate Commerce Commission are submitted for the railways of the eastern district:

	1911.	1910.		
Miles operated	52,836	52,340	Inc.	496
Total operating revenue	$1,114,027,248	$1,095,467,589	Inc.	$18,559,659
Net operating revenue	$330,159,909	$357,810,109	Dec.	$27,650,200
Total number of employees	679,179	687,376	Dec.	8,197
Total compensation (employees)	$518,781,736	$479,364,934	Inc.	$39,416,802

"From these figures it will be seen that while gross earnings increased $18,559,659 in 1911 there was a decrease of $27,650,200 in net earnings; and while 8,197 less men were employed, the total wages increased $39,416,802.

"This headlong movement towards financial disaster cannot proceed unchecked."

German Vacations and the Railways.

It is proposed in Germany to change the end of the school year in different districts or states so that the vacation may begin at different seasons, and the summer travel on the railways be more evenly distributed. As a rule, at present the schools close almost all over Germany in the second week of July, and then every student wishes to start for his summer vacation. In the great majority of cases these people are not away from home much more than three weeks, and as things are at present hotels as well as railways are at their wit's end to provide for the crowd from the middle of July till the middle of August, and lack patronage before and after. The proposition is to close the schools in Berlin and most of Prussia July 1; in Saxony and the Hanseatic cities three weeks later; in another portion of the country six weeks later.

International Railway General Foremen's Association.

At the annual convention of the International Railway General Foremen's Association, to be held at the Hotel Sherman, Chicago, July 23-26, the following papers will be presented for discussion: How Can Shop Foremen Best Promote Efficiency? (A continuation of a paper presented at the 1910 convention) by William G. Reyer (N. C. & St. L.); Shop Supervision and Local Conditions, by W. W. Scott (P. M.); Shop Specialization Work and Tools, by W. T. Gale (C. & N. W.); Roundhouse Efficiency, by W. Hall (C. & N. W.). Special papers will be presented on Reclaiming of Scrap, by C. H. Voges (C. C. C. & St. L.); and by C. Odger (A. T. & S. F.). On the Relation of Tests to Shop Efficiency, by J. S. Sheafe (I. C.), and L. A. North (I. C.).

Cleveland Engineering Society.

At the regular meeting of the Cleveland Engineering Society, to be held April 9, there will be a symposium on the Elimination of Grade Crossings.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

Air Brake Association.—F. M. Nellis, 53 State St., Boston, Mass.; annual, May 7-10, Richmond, Va.

American Association of Demurrage Officers.—A. G. Thomason, Boston, Mass.; annual, May 10-11, San Francisco, Cal.

American Association of General Passenger and Ticket Agents.—W. C. Hope, New York; next convention, Seattle, Wash.

American Association of Freight Agents.—R. O. Wells, East St. Louis, Ill.; annual, June 18-21, Detroit, Mich.

American Association of Railroad Superintendents.—O. G. Fetter, Carew building, Cincinnati, Ohio; 3d Friday of March and Sept.

American Electric Railway Association.—H. C. Donecker, 29 W. 39th St., New York. Convention, October 7-11, Chicago.

American Electrical Railway Manufacturers' Assoc.—George Keegan, 165 Broadway, New York. Meetings with Am. Elec. Ry. Assoc.

American Railway Association.—W. F. Allen, 75 Church St., New York. Next session, May 15, New York.

American Railway Bridge and Building Association.—C. A. Lichty, C. & N. W., Chicago. Convention, 3d week in Oct., Baltimore, Md.

American Railway Engineering Association.—E. H. Fritch, Monadnock Block, Chicago.

American Railway Master Mechanics' Assoc.—J. W. Taylor, Old Colony building, Chicago. Convention, June 17-19, Atlantic City, N. J.

American Railway Tool Foremen's Association.—M. H. Bray, N. Y. N. H. & H., New Raven, Conn. Convention, July 9, Chicago.

American Society for Testing Materials.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.

American Society of Civil Engineers.—C. W. Hunt, 220 W. 57th St., New York; 1st and 3d Wed., except June and August, New York.

American Society of Engineering Contractors.—J. R. Wemlinger, 13 Park Row, New York; 2d Tuesday of each month, New York.

American Society of Mechanical Engineers.—Calvin W. Rice, 29 W. 39th St., New York.

American Wood Preservers' Association.—F. J. Angier, B. & O., Baltimore, Md. Convention, 3d week in January, 1913, Chicago.

Association of American Railway Accounting Officers.—C. G. Phillips, 143 Dearborn St., Chicago; annual, June 26, 1912, Quebec, Que.

Association of Railway Claim Agents.—J. R. McSherry, C. & E. I., Chicago; annual convention, May 22, 1912, Los Angeles, Cal.

Association of Railway Electrical Engineers.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago. Semi-annual, June 11, Atlantic City, N. J.; annual, October 21-25, Chicago.

Association of Railway Telegraph Superintendents.—P. W. Drew, 135 Adams St., Chicago; annual, June 24, 1912, New York.

Association of Transportation and Cac Accounting Officers.—G. P. Conrad, 75 Church St., New York. Convention, Oct. 7-11, Chicago.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 2d Tuesday in month, except June, July and Aug., Montreal.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 413 Dorchester St., Montreal, Que.; Thursdays, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month, Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Thurs. in Jan. and 2d Fri. in March, May, Sept., Nov., Buffalo, N. Y.

CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—L. S. Pomeroy, Old State Capitol building, St. Paul, Minn.; 2d Monday, except June, July, August and September, St. Paul.

ENGINEERS' SOCIETY OF PENNSYLVANIA.—E. R. Dasher, Box 704, Harrisburg, Pa.; 1st Monday after 2d Saturday, Harrisburg, Pa.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—E. K. Hiles, 803 Fulton building, Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.

FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Richmond, Va.; annual, May 15, Buffalo, N. Y.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—E. S. Koller, 226 W. Adams St., Chicago; Wed. preceding 3d Thurs., Chicago.

INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, rue de Louvain, 11 Brussels; 1915, Berlin.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago. Convention, May 22-25, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—L. H. Bryan, Brown Marx building, Birmingham, Ala. Convention, July 23-26, Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, Lima, Ohio. Convention, August 15, Chicago.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York; annual convention, May 14-17, Pittsburgh, Pa.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago. Annual convention, June 12-14, Atlantic City, N. J.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOC. OF U. S. AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Convention, September, 10-13, Denver, Col.

NATIONAL RAILWAY APPLIANCES ASSOC.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Meetings with Am. Ry. Eng. Assoc.

NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.

NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.

NORTHERN RAILROAD CLUB.—C. L. Kennedy, C. M. & St. P., Duluth, Minn.; 4th Saturday, Duluth.

OMAHA RAILWAY CLUB.—H. H. Maulick, Barker Block, Omaha, Neb.; second Wednesday.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, Union Station, Peoria, Ill.; 2d Tuesday.

RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 2 Rector St., New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Penna. R. R., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOC.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Assoc. Ry. Elec. Engrs.

RAILWAY GARDENING ASSOCIATION.—J. S. Butterfield, Lee's Summit, Mo.; next meeting, August 13-16, Roanoke, Va.

RAILWAY INDUSTRIAL ASSOCIATION.—G. L. Stewart, St. L. S. W. Ry., St. Louis, Mo.; annual, May 12, 1912, Kansas City, Mo.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Bethlehem, Pa.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, Box C, Collinwood, Ohio. Convention, May 20-22, Buffalo, N. Y.

RAILWAY SUPPLY MANUFACTURERS' ASSOC.—J. D. Conway, 2135 Oliver Bldg., Pittsburgh, Pa. Meetings with M. M. and M. C. B. assocs.

RAILWAY TEL. & TEL. APPLIANCE ASSOC.—W. E. Harkness, 284 Pearl St., New York. Meetings with Assoc. of Ry. Teleg. Sups.

RICHMOND RAILROAD CLUB.—F. O. Robinson, Richmond, Va.; 2d Monday, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. Y., Sterling; September, 1912, Buffalo, N. Y.

ST. LOUIS RAILWAY CLUB.—B. W. Fraumenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmonds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—C. Nyquist, La Salle St. Station, Chicago.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Montgomery, Ala.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., Atlanta.

TOLEDO TRANSPORTATION CLUB.—J. G. Macomber, Woolson Spice Co., Toledo, Ohio; 1st Saturday, Toledo.

TRAFFIC CLUB OF CHICAGO.—Guy S. McCabe, La Salle Hotel, Chicago; meetings monthly, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Erie, Pittsburgh, Pa.; meetings monthly, Pittsburgh.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7042 Stewart Ave., Chicago; annual, June 18, 1912, Louisville, Ky.

TRANSPORTATION CLUB OF BUFFALO.—J. M. Sells, Buffalo; first Saturday after first Wednesday.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, L. S. & M. S., Detroit, Mich.; meetings monthly.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.; August, 1912.

WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, Old Colony building, Chicago; 3d Tuesday of each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago; 1st Monday in month, except July and August, Chicago.

Traffic News.

The Chicago, Rock Island & Pacific is running an agricultural demonstration train of six cars over its lines in Arkansas.

L. D. Rosenheimer, until recently secretary of the Rockford Manufacturers' and Shippers' Association at Rockford, Ill., has entered upon his duties as general traffic manager of the Booth Fisheries Co. and its subsidiaries.

According to the returns of the cotton ginners for the season up to the first of March, it is estimated that the cotton crop of the last year will aggregate 16,050,000 bales, which is nearly 31 per cent. more than the average yearly crop during the preceding ten years (11,500,000 bales). In consequence of the low figure to which the price of cotton has been reduced by the enormous yield, a considerable quantity remained unpicked; but in spite of this the average production was 235 lbs. an acre.

A special "good roads" train is being operated by the St. Louis & San Francisco on an itinerary which will cover the entire system. The train consists of four cars carrying exhibits of models of road construction, and the lecturers who will demonstrate them. The progress of the train is being widely advertised throughout the territory served by the Frisco and every effort is being made to attract large audiences and impress upon them the importance of good roads. Over 300 stops have been scheduled.

The statement of exports and imports made up by the Department of Commerce and Labor for the month of February shows increases over February, 1911, on both sides. The value of imports increased from $121,694,000 to $134,207,000; exports from $173,304,000 to $196,821,000. The value of cotton exported increased from 410 millions to 643 millions, and for the eight months ending with February, from 3,456 millions to 4,321 millions. Copper for the month increased from 49 millions to 72 millions, and iron and steel articles in a still larger proportion.

The Canadian Railway Commission has rendered a decision in the case of the Dawson Board of Trade versus the White Pass & Yukon Railway Company, rescinding an order of January 18, 1911, which reduced the freight and passenger rates on the rail division of this company between Skagway, Alaska, and White Horse, Yukon Territory, by 33⅓ per cent.. On a rehearing of the case, which had been before the commission for five years, the company showed that the reduction of its rates by one-third would leave a deficit of $127,000 a year, after paying fixed charges. President O. L. Dickeson voluntarily agreed to make a number of reductions in the interest of the development of the country.

The Louisiana State University is running a "farmers' demonstration train" over the railways of the state which consists of ten cars, the longest train of the kind which we remember to have heard of. Co-operating with the university are the State Agricultural College, the State Board of Health, the State Board of Education and the United States Department of Agriculture. Besides the animals and farm exhibits, there is a school exhibit and a general health exhibit. This train makes comparatively long stops, the schedule over the Vicksburg, Shreveport & Pacific providing in most cases for only three towns a day. For example, April 2, Mound, 8 to 10; Delhi, 11 to 2:30; Rayville, 3 to 5.

The classification committee of the National Industrial Traffic League, of which D. O. Ives, of Boston, is chairman, has submitted a report to the league that it is unprepared to make recommendations as to actual uniformity of classification ratings, but that steps ought to be taken at once to provide for a uniform scale of numbering the classes. The committee has prepared a draft of a tentative plan by which it believes a gradual change from "the present chaotic medley of classes to a uniform scale can be made without any material changes in the ratings and without disruption of traffic conditions or extraordinary expense." The plans submitted readjust the present classifications into ten classes, each corresponding as closely as possible to the present relationships. The report states that the committee believes that no decisions as to the feasibility of uniform rating can ever be intelligently made until this essential preliminary work is accomplished.

Chicago Traffic Club.

The Traffic Club of Chicago at its meeting last Tuesday evening elected the following officers (the regular ticket): President, Frank B. Montgomery, traffic manager, International Harvester Company; first vice-president, Edward S. Keeley, vice-president, Chicago, Milwaukee & St. Paul; second vice-president, J. W. Hicks, traffic manager, Sears, Roebuck & Co.; third vice-president, Fred H. Tristram, assistant general passenger agent, Wabash; secretary, Guy S. McCabe, general Western freight agent, Pennsylvania Company; treasurer, Charles B. Hopper, general freight agent, Goodrich Transportation Company; directors for two years, Frank P. Eyman, Fred Zimmerman, Robert C. Ross and F. T. Randall.

Still Another Variety.

The latest traveling instruction enterprise for the benefit of the farmers is called the "Drainage and Good Roads Special." It is being run over the Missouri, Kansas & Texas in the state of Kansas. One of the lecturers is the state highway engineer, who discusses not only roads but concrete bridges.

New Grain Elevator at New York.

The Lehigh Valley has decided to build a large grain elevator at its freight terminus in New York harbor near the Greenville docks of the Pennsylvania. The building will be of reinforced concrete, to hold five hundred thousand bushels. The contract has been let to the Witherspoon-Englar Company, of Chicago, the work to be done by next October.

New Grand Trunk Steamships.

The directors of the Central Vermont, which is controlled by the Grand Trunk of Canada, at a meeting held last week, voted to order the construction of two steamships of 5,000 tons each; and it is said that the vessels are intended to be run between New York City and Providence, Rhode Island.

Car Surpluses and Shortages.

Arthur Hale, chairman of the committee on relations between railways of the American Railway Association in presenting statistical bulletin No. 115, giving a summary of car shortages and surpluses by groups from November 9, 1910, to March 13, 1912, says:

"Compared with the preceding period the total surplus shows but little change, there being an increase of 1,044 cars. There is, however, an increase of 3,886 in surplus box cars with decreases in the other classes of equipment. The increase in the surplus is practically altogether in groups 6 (Iowa, Illinois, Wisconsin, Minnesota and the Dakotas), 8 (Kansas, Colorado, Missouri, Arkansas and Oklahoma) and 10 (Oregon, Idaho, Arizona, California and Washington). The total shortage increased 5,843 cars, of which 2,075 are box and 3,576 coal cars. This increase in shortage is general throughout the country, but is particularly noticeable in group 3 (Ohio, Indiana, Michigan and western Pennsylvania). Compared with the same date of 1911 there is a decrease in surplus of 162,499 cars, of which 30,204 is in box and 105,067 is in coal cars; and an increase in shortage of 41,719 cars, of which 25,299 is in box and 11,622 is in coal cars. The bulk of this decrease is in groups 2 (New York, New Jersey, Delaware, Maryland and eastern Pennsylvania), 3, 6, 8 and 10 (see above); and the principal increases in shortage occurred in groups 2, 3 (as above), 4 (the Virginias and Carolinas), 5 (Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida), 6 (as above), and 11 (Canadian Lines).

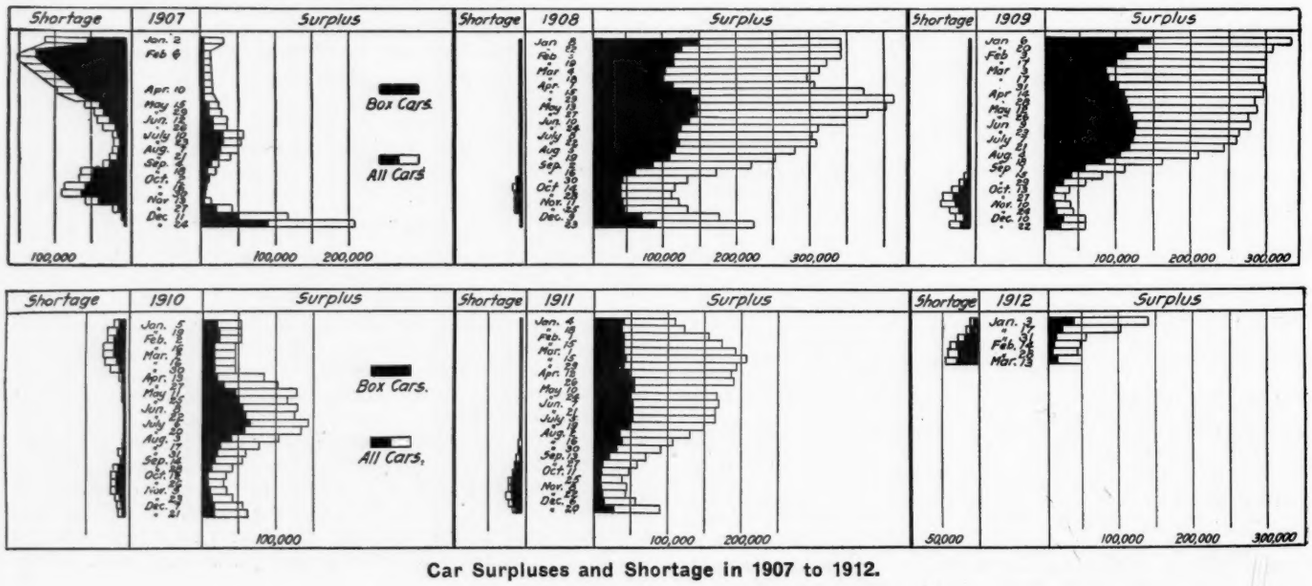
"This increase in surplus and increase in shortage as compared with 1911, while doubtless partially due to the greater severity of the weather this year, may in part be explained by the prospective suspension in coal traffic."

The accompanying table gives car surplus and shortage figures by groups for the last period covered in the report, and the diagrams show total bi-weekly surpluses and shortages in 1907 to 1911.

CAR SURPLUSES AND SHORTAGES.

Date.	No. of roads.	Surpluses: Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.	Shortages: Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.
Group *1.—March 13, 1912	7	80	1,492	486	90	2,148	334	97	0	159	590
" 2.— " 13, 1912	25	327	92	1,368	527	2,314	1,233	21	2,750	155	4,159
" 3.— " 13, 1912	25	0	714	951	1,469	3,134	6,307	125	4,262	1,923	12,617
" 4.— " 13, 1912	10	17	146	272	682	1,117	2,720	263	3,650	500	7,133
" 5.— " 13, 1912	18	7	6	4	312	329	3,539	139	483	206	4,367
" 6.— " 13, 1912	23	2,781	284	2,416	3,017	8,498	3,734	76	516	277	4,603
" 7.— " 13, 1912	3	55	86	15	156	312	534	0	24	5	563
" 8.— " 13, 1912	15	2,744	191	1,228	2,118	6,281	90	30	19	201	340
" 9.— " 13, 1912	9	1,762	138	201	658	2,759	75	0	0	0	75
" 10.— " 13, 1912	23	5,120	2,523	2,903	8,093	18,639	10	15	5	7	37
" 11.— " 13, 1912	5	17	329	0	151	497	7,013	135	0	1,353	8,501
Total	163	12,910	6,001	9,844	17,273	46,028	25,589	901	11,709	4,786	42,985

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida lines; Group 6—Iowa, Illinois, Wisconsin, Minnesota and the Dakotas lines; Group 7—Montana, Wyoming and Nebraska lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Oregon, Idaho, California and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortage in 1907 to 1912.

Revenues and Expenses in January.

The Bureau of Railway Economics includes in bulletin No. 30 returns from 227,813 miles of line, or about 93 per cent. of all the steam railway mileage in the United States. The total operating revenues for the month of January, 1912 amounted to $203,143,118. Compared with January, 1911, the total operating revenues of these railways show a decrease of $2,886,149. These operating revenues per mile of line amounted to $892 in January, 1912, and $917 in January, 1911, a decrease for 1912 of $25, or 2.8 per cent. This decrease in operating revenues resulted from decreases in freight and passenger revenues and in other transportation revenues.

Operating expenses amounted to $158,911,489. This was $4,205,871 more than for January, 1911. These operating expenses per mile of line amounted to $698 in January, 1912, and $689 in January, 1911, an increase for 1912 of $9 per mile, or 1.3 per cent. In the cost per mile of maintaining way and structures, there was a decrease compared with January, 1911, of 1.6 per cent., and in traffic expenses per mile a decrease of 0.4 per cent.; in the cost per mile of maintaining equipment there was an increase of 2.8 per cent.; in the cost per mile of conducting transportation, an increase of 1.6 per cent., and in general expenses per mile an increase of 0.5 per cent.

Net operating revenue amounted to $44,231,629. This was $7,092,020 less than for January, 1911. Net operating revenue per mile of line amounted to $194 in January, 1912, and $228 in January, 1911, a decrease for 1912 of $34 per mile, or 15.0 per cent. The net operating revenue for each mile of line for each day in January averaged $6.26, as compared with $7.37 for January, 1911.

Taxes for the month of January amounted to $9,579,337, or $42 per mile, an increase of 11.7 per cent. over January, 1911.

The operating ratio for January was 78.2 per cent., as compared with 68.7 per cent. in December, 1911, and 75.0 per cent. in January, 1911.

The eastern group of railways show a decrease in total operating revenues per mile, as compared with January, 1911, of 0.8 per cent., the southern group a decrease of 2.4 per cent., and the western group a decrease of 5.4 per cent. Operating expenses per mile increased 2.1 per cent. on the eastern railways, as compared with January, 1911, and on the southern railways 5.1 per cent., but decreased on the western railways 1.1 per cent. On the eastern group of railways there was an increase in the cost of maintaining way and structures, the cost of maintaining equipment, and in transportation expenses. Traffic expenses and general expenses show decreases. On the southern railways there were increases in each of these primary expense accounts. On the western railways there were decreases in the cost of maintaining way and structures, in the cost of maintaining equipment, and in the cost of conducting transportation, but there were increases in traffic expenses and general expenses. All the groups show considerable decreases in net operating revenue per mile. In the eastern group this net revenue per mile decreased 10.7 per cent., as compared with January, 1911; in the southern group it decreased 19.4 per cent.; in the western group it decreased 17.7 per cent. Taxes increased in all the groups, as compared with January, 1911, the increase per mile amounting to 14.6 per cent. in the eastern group, 2.5 per cent. in the southern group, and 11.1 per cent. in the western group.

INTERSTATE COMMERCE COMMISSION.

The Indianapolis freight bureau has complained against the Big Four and other roads that millers in Indianapolis are discriminated against in the rates on grain originating in Illinois and west of there.

Hearings are being held at New York by Commissioner Harlan in the investigation of the relations between the short line railways owned by steel companies and the larger railways. The investigation has been heretofore in Pittsburgh.

The Chicago Board of Trade has sent to the commission a complaint alleging excessive freight rates on wheat from Minneapolis to Chicago, referring especially to wheat shipments originating beyond Minneapolis as compared with the rates on flour from the Minneapolis mills.

The Michigan Copper & Brass Company of Detroit has complained to the commission against the Duluth, South Shore & Atlantic and other roads claiming that the rates on copper charged by the railways discriminate in favor of copper mills in New York and New Jersey as against those at Detroit. A differential of three cents per hundred pounds is allowed to eastern mills, but is not allowed at Detroit.

The commission has issued an order which provides that, pending the action of the commission on applications for relief under the long and short haul clause in cases where through rates are published which exceed the lowest combination of rates, railways may collect through rates by reducing them so as to equal the lowest combination of locals, even when such reduction may have the effect of increasing the discrimination against intermediate points. Such rates, of course, may be subject of complaint or investigation.

Hearing at Chicago on Weighing Practices.

Chairman C. A. Prouty, of the Inerstate Commerce Commission, began a hearing at Chicago on March 25 for the purpose of investigating alleged irregularities and discrepancies in the weighing of carload freight. The investigation was undertaken on complaint of a large number of associations of lumber, coal and hay dealers. It was complained that the scales used by railways are very often inaccurate and not properly maintained, that the weights are often taken by an irresponsible class of employees, and that the stenciled weights of cars are so inaccurate that the shipper is often obliged to pay freight rates on a large amount of tare.

The principal witness at the hearing was C. F. Staples, chairman of the Minnesota railway commission, which has made a very thorough study of the weighing question. Mr. Staples submitted several statements compiled from reports made by state weighmasters of cars weighed at terminals with careful provision, he said, to omit from consideration cars whose weight was affected by snow and dirt. One of Mr. Staples' statements showed that between January 28 and February 28, 1911, 12 cars of the Chicago Great Western weighed 8,500 lb. over the stenciled weight, 15 cars weighed 9,300 lb. under the stenciled weight and one car was correctly stenciled. On the Chicago & North Western 84 cars weighed 39,600 lb. over the stenciled weight, 41 weighed 21,500 lb. less than the stenciled weight and five cars were correctly stenciled. On the Chicago, St. Paul, Minneapolis & Omaha 72 cars weighed 39,900 lb. over, eight cars 1,700 lb. under and five were correctly stenciled. On the Great Northern 371 cars weighed 233,530 lb. over, 19 cars 4,800 lb. under and nine were correctly stenciled. On the Soo line 188 cars weighed 27,400 lb. over, 41 cars weighed 21,800 lb. under and six were correctly stenciled. Another table contained an aggregate of 1,388 cars which weighed 1,067,020 lb. over the stenciled weight and 393 cars weighing 224,300 lb. under the stenciled weight, while 66 cars were found to be correctly stenciled. Mr. Staples said that a scale on which the Northern Pacific weighed cars for the purpose of obtaining the stenciled weights was found to show a variation of 8,000 lb. He said that incorrect weighing in his opinion was largely the result of a lack of care because the variations were such as to impose an injustice on the railways as well as on the shippers.

The examination of Mr. Staples was not completed and Commissioner Prouty announced that he would in all probability be recalled.

Advanced Rate on Cattle Refused.

In re suspension of advances in rates on stock cattle and sheep. Opinion by Commissioner Clements:

Heretofore a 75 per cent. rate has been charged on so-called "stockers" and "feeders" as compared with a 100 per cent. rate on cattle for market. The proposed advances were to increase the rates on stockers and feeders to the 100 per cent. rate on the ground that there was no essential difference in the cost of handling these cattle and cattle for market, and that this lower rate on stockers and feeders was granted only as a favor by the railways and could be withdrawn at will. The commission, however, finds that the present adjustment of rates has been in effect for more than 25 years, and that the railways fail to justify the proposed advances. The railways have until April 15, 1912, to cancel the proposed rates, and if that is not done, the commission will issue its order. (23 I. C. C., 7.)

REVENUES AND EXPENSES OF EXPRESS COMPANIES.

	Miles of line covered.						Operating expenses.								
	Steam roads.	Other lines.	Express revenue.	Gross receipts from operation.	Less expense privileges, Dr.	Total operating revenues.	Maintenance.	Traffic.	Transportation.	General.	Total.	Net operating revenue (or deficit).	Taxes.	Operating income (or loss —).	Increase or decr. (—) comp. with last year.
Month of July, 1911.															
Adams Express Co.[1]	32,918	3,754	$2,420,931	$2,447,905	$1,288,698	$1,159,207	$62,184	$10,044	$1,038,178	$79,027	$1,189,433	—$30,225	$19,779	—$50,004	—$98,172
American Express Co.[2]	54,304	2,561	3,139,491	3,286,447	1,538,351	1,748,096	50,680	29,559	1,444,330	110,470	1,635,039	113,057	30,000	83,057	—58,909
Canadian Express Co.[3]	6,400	830	246,470	251,508	116,786	134,722	6,094	1,637	90,694	6,520	104,945	29,777	2,250	27,527	15,526
Canadian Northern Express Co.[4]	3,369	22	45,517	46,811	18,207	28,604	100	578	13,164	2,078	15,920	12,684	128	12,556	2,747
Globe Express Co.[5]	2,904	.....	74,674	75,252	37,873	37,379	684	1,748	24,608	3,568	30,608	6,771	800	5,971	—4,638
Great Northern Express Co.[6]	8,466	337	243,122	244,292	146,732	97,560	1,782	1,586	65,920	3,728	73,016	24,544	3,404	21,140	—12,351
National Express Co.	1,422	218	112,259	112,678	42,939	69,739	1,287	.....	50,498	2,973	54,758	14,981	2,933	12,048	—1,925
Northern Express Co.[7]	7,310	315	281,354	284,336	143,806	140,530	1,237	3,179	79,888	7,559	91,863	48,667	4,500	44,167	—12,903
Pacific Express Co.[8]	15,615	1,043	431,360	439,050	213,407	225,643	4,623	5,222	179,393	12,041	201,279	24,364	1,843	22,521	—22,072
Southern Express Co.[9]	31,735	846	995,054	1,013,705	486,178	527,527	16,383	12,160	390,896	54,464	473,903	53,624	14,769	38,855	—20,001
United States Express Co.[10]	28,965	3,943	1,579,025	1,604,944	788,687	816,257	34,112	16,361	790,344	49,138	889,955	73,698	9,899	83,597	—128,194
Wells, Fargo & Co.[11]	47,354	17,334	1,973,546	2,010,569	939,242	1,071,327	38,986	23,103	826,599	64,859	953,547	117,780	24,713	93,067	—23,028
Western Express Co.[12]	4,843	8	92,520	94,100	49,882	44,218	1,525	4,596	36,407	3,579	46,107	—1,889	725	—2,614	—4,184
Month of August, 1911.															
Adams Express Co.[13]	32,945	4,707	$2,554,524	$2,586,048	$1,288,731	$1,297,317	$68,950	$6,572	$1,048,016	$80,995	$1,204,533	$92,784	$19,645	$73,139	—$37,393
American Express Co.[14]	54,325	2,561	3,247,254	3,393,232	1,591,154	1,802,078	42,154	28,568	1,442,207	118,078	1,631,007	171,071	30,000	141,071	—50,257
Canadian Express Co.[15]	6,400	830	256,216	261,349	125,616	135,733	6,207	845	93,321	6,157	106,530	29,203	2,250	26,953	—8,205
Canadian Northern Express Co.[16]	3,370	22	40,731	42,278	16,292	25,986	93	437	13,813	1,187	15,530	10,456	129	10,327	329
Globe Express Co.[17]	2,904	.....	77,626	78,209	38,853	39,356	767	1,605	25,763	3,649	31,784	7,572	800	6,772	—5,402
Great Northern Express Co.[18]	8,466	399	254,087	255,358	153,367	101,991	2,269	1,267	67,572	3,885	74,993	26,998	3,640	23,358	—1,727
National Express Co.	1,422	218	115,932	116,319	44,344	71,975	797	3	49,962	2,947	53,709	18,266	+1,964	20,230	284
Northern Express Co.[19]	7,310	315	272,900	275,933	139,657	136,276	928	3,362	80,474	4,759	89,523	46,753	4,500	42,253	—34,971
Pacific Express Co.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southern Express Co.[20]	31,816	846	976,741	995,099	470,174	524,925	15,242	10,025	393,355	54,092	472,714	52,211	14,814	37,397	1,685
United States Express Co.[21]	28,965	3,965	1,676,167	1,703,120	782,677	920,443	35,571	18,552	807,465	44,980	906,568	13,875	10,248	3,627	—41,746
Wells, Fargo & Co.[22]	63,441	17,314	2,525,947	2,570,765	1,190,213	1,380,552	49,448	29,187	964,551	74,032	1,117,218	263,334	24,750	238,584	38,951
Western Express Co.[23]	4,843	8	91,176	92,763	48,807	43,956	939	2,611	35,527	3,836	42,913	1,043	727	316	13,688
Month of September, 1911.															
Adams Express Co.[24]	33,043	4,707	$2,862,954	$2,896,813	$1,436,253	$1,460,560	$70,993	$5,991	$1,053,230	$82,324	$1,212,538	$248,022	$20,056	$227,966	$12,462
American Express Co.[25]	54,419	2,466	3,758,258	3,917,090	1,833,379	2,083,711	56,804	27,442	1,436,079	119,044	1,639,369	444,342	30,422	413,920	22,413
Canadian Express Co.[26]	6,400	830	265,109	269,485	126,390	143,095	7,855	871	95,592	6,207	110,525	32,570	2,250	30,320	—12,033
Canadian Northern Express Co.[27]	3,551	22	41,305	42,748	17,093	25,655	606	217	13,249	996	15,068	10,587	128	10,459	—456
Globe Express Co.[28]	2,904	.....	85,353	85,981	42,731	43,250	608	1,608	26,144	3,776	32,136	11,114	800	10,314	—127
Great Northern Express Co.[29]	8,467	399	257,975	259,091	156,190	102,901	1,506	1,527	70,365	3,802	77,200	25,701	3,530	22,171	639
National Express Co.	1,422	218	113,360	113,732	43,487	70,245	798	4	48,784	3,014	52,600	17,645	485	17,160	—4,358
Northern Express Co.[30]	7,310	315	273,561	277,010	141,073	135,937	2,471	3,166	79,844	5,929	91,410	44,527	4,500	40,027	—37,338
Pacific Express Co.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southern Express Co.[31]	31,841	846	1,116,580	1,138,656	547,025	591,631	16,847	9,006	393,471	55,484	474,808	116,823	14,833	101,990	—7,095
United States Express Co.[32]	28,965	3,939	1,810,450	1,839,297	832,276	1,007,021	31,440	14,713	809,542	42,227	897,922	109,099	9,600	99,499	—58,709
Wells, Fargo & Co.[33]	63,604	17,314	2,854,798	2,904,133	1,354,424	1,549,709	69,768	25,559	1,100,491	80,187	1,276,005	273,704	24,750	248,954	10,421
Western Express Co.[34]	4,892	4	99,327	100,935	50,884	50,051	854	2,410	33,807	3,255	40,326	9,725	769	8,956	9,425
Three Months of Fiscal Year, 1912.															
Adams Express Co.[35]	33,043	4,707	$7,838,409	$7,930,766	$4,013,681	$3,917,085	$202,126	$22,608	$3,139,425	$242,346	$3,606,505	$310,580	$59,480	$251,100	—$123,103
American Express Co.[36]	54,419	2,466	10,145,004	10,596,769	4,962,884	5,633,885	149,637	85,569	4,322,617	347,593	4,905,416	728,469	90,422	638,047	—86,753
Canadian Express Co.[37]	6,400	830	767,795	782,342	368,792	413,550	20,157	3,352	279,607	18,884	322,000	91,550	6,750	84,800	89,514
Canadian Northern Express Co.[38]	3,551	22	127,553	131,837	51,592	80,245	799	1,231	40,226	4,262	46,518	33,727	385	33,342	2,621
Globe Express Co.[39]	2,904	.....	237,654	239,442	119,457	119,985	2,059	4,961	76,515	10,993	94,528	25,457	2,400	23,057	—10,167
Great Northern Express Co.[40]	8,467	399	755,185	758,741	456,290	302,451	5,558	4,379	203,857	11,415	225,209	77,242	10,574	66,668	—13,440
National Express Co.	1,422	218	341,551	342,730	130,771	211,959	2,882	7	149,244	8,934	161,067	50,892	1,454	49,438	6,000
Northern Express Co.[41]	7,310	315	827,816	837,279	424,536	412,743	4,637	9,706	240,205	18,248	272,796	139,947	13,500	126,447	—85,212
Pacific Express Co.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southern Express Co.[42]	31,841	846	3,088,375	3,147,460	1,503,377	1,644,083	48,472	31,191	1,177,721	164,040	1,421,424	222,659	44,417	178,242	—25,411
United States Express Co.[43]	28,965	3,939	5,065,643	5,147,360	2,403,640	2,743,720	101,123	49,626	2,407,350	136,345	2,694,444	49,276	29,746	19,530	—228,649
Wells, Fargo & Co.[44]	63,604	17,314	7,354,291	7,485,468	3,483,880	4,001,588	158,202	77,849	2,891,642	219,078	3,346,771	654,817	74,213	580,604	26,344
Western Express Co.[45]	4,892	4	283,023	287,798	149,699	138,099	3,319	9,618	105,614	10,669	129,220	8,879	2,221	6,658	18,930

† Operations ceased July 31, 1911. Business disbanded.

Steam Roads (corresponding period last year)—[1] 32,700; [2] 53,038; [3] 6,298; [4] 3,280; [5] 1,916; [6] 7,835; [7] 6,601; [8] 15,944; [9] 31,397; [10] 28,815; [11] 47,024; [12] 3,506; [13] 32,700; [14] 53,250; [15] 6,298; [16] 3,292; [17] 1,916; [18] 7,835; [19] 6,601; [20] 31,430; [21] 28,815; [22] 47.050; [23] 3,506; [24] 32,527; [25] 54,560; [26] 6,964; [27] 3,292; [28] 2,837; [29] 7,835; [30] 6,601; [31] 31,430; [32] 28,792; [33] 46,049; [34] 3,506; [35] 32,527; [36] 54,560; [37] 6,964; [38] 3,293; [39] 2,837; [40] 7,835; [41] 6,601; [42] 31,430; [43] 28,792; [44] 46,049; [45] 3,506.

Other Lines (corresponding period last year)—[1] 3,763; [2] 2,696; [6] 381; [7] 261; [8] 1,019; [9] 816; [10] 4,092; [11] 4,728; [12] 4; [13] 3,763; [14] 2,696; [18] 381; [19] 261; [20] 816; [21] 4,169; [22] 4,728; [23] 4; [24] 3,727; [25] 2,645; [29] 381; [30] 261; [31] 816; [32] 4,057; [33] 5,104; [35] 3,727; [36] 2,645; [37] 830; [40] 381; [41] 261; [42] 816; [43] 4,057; [44] 5,104.

Refusal to Operate a Spur Track.

Chicago, Wilmington & Vermillion Coal Co. v. Chicago, Burlington & Quincy et al. Opinion by Commissioner Clements:

The defendant has refused to build a spur track to the complainant's coal mine at Thayer, Ill., while it has built and operates spur tracks to other mines in its Illinois field. At other mines the complainant makes an allowance for the operation of privately built spur tracks, but refuses to do so at the complainant's mines, and this constitutes a discrimination which the defendants are expected to remove. (23 I. C. C., 13.)

Advance in Lemon Rates Refused.

In re suspension of advances in rates on lemons, C. L., from California to Colorado, Utah, Montana, etc. Opinion by Chairman Prouty:

An advance from $1 to $1.15 per 100 lbs. on lemons is not found to be reasonable and is not justified by the railways making the advance. The commission finds that the average haul on lemons is from four to five hundred miles less than on oranges, and that lemons may properly be loaded much more heavily per car than oranges. A rate, therefore, of $1 on lemons is not unduly low as compared with a rate of $1.15 on oranges. Carriers are permitted, however, to fix a minimum loading for collapsible bunker cars that will require them to be loaded to their full capacity. (23 I. C. C., 27.)

Exclusive Baggage Privileges on Trains Upheld.

W. G. Cosby v. Richmond Transfer Co. et al. Opinion by Commissioner Lane:

The granting of exclusive privileges to baggage transfer agents of a company which is controlled by railway officers does not form any undue discrimination, since the transfer of baggage is not a duty which the railways undertake to perform themselves for their patrons. Allowing, for sake of argument, that the rates made by the defendant are unreasonable, the commission is of the opinion that the act to regulate commerce does not give it jurisdiction over local baggage transfer companies when the service of such companies does not begin until the baggage has left the hands of the railway company. The granting of an exclusive privilege is not *per se* undue or unreasonable. (23 I. C. C., 66.)

Grain Elevation at Chicago.

Van Natta Brothers et al. v. Cleveland, Cincinnati, Chicago & St. Louis, et al. Opinion by Commissioner Lane:

Complainants are owners and operators of grain elevators located at points in Indiana and Illinois, on the line of the principal defendant. Under the tariffs of other roads which serve complainants' competitors in the same producing territory grain can be unloaded into elevators at Chicago, and there treated and shipped on at the balance of a through rate from point of origin to destination. The defendant is a party to such tariffs and participates in the through rates, but it refuses to grant like rates, or to allow any transit privilege at Chicago, on grain from complainants' elevators; its purpose being to hold such grain to its own line in order to get the larger revenue incident to the longer haul to eastern markets. This is an undue discrimination against complainants from which the carrier should be required to desist.

A Through Route Ordered.

Stonega Coke & Coal Co. et al. v. Louisville & Nashville. Opinion by Commissioner McChord:

The petition asks that the Louisville & Nashville be compelled to establish a through route and joint rate from the mines of the complainant through Appalachia to the coal markets, and this the L. & N. has refused to do, claiming that the Interstate Railroad is not a common carrier but merely a plant facility, and that moreover the rates from Appalachia are so low that if it divided them with the Interstate Railroad it would not receive a fair compensation for service performed. The Interstate Railroad operates about 30 miles of line; has 17 stations, of which seven are shipping stations of the Stonega Coke & Coal Company; operates 10 passenger trains daily, and has a large passenger station at Appalachia. It files tariffs and reports with the Interstate Commerce Commission, and maintains through routes and joint rates with the Carolina, Clinchfield & Ohio, and with the Norfolk & Western. The fact that the larger part of the freight it carries is for the Stonega company does not prove that it is a plant facility. Tested by a comparison with other cases, the commission decides that the Interstate Railroad is a common carrier. The L. & N. performs the service asked for by the complainants in this case at the mines at St. Charles. The conditions of transportation are substantially the same as between the two fields; yet the L. & N. gives to St. Charles' operations a service which it refuses to give to complainants' operations, and the commission finds that there is undue discrimination against the complainants. The case will be held open for such discrimination to be removed. (23 I. C. C., 17.)

STATE COMMISSIONS.

The Pennsylvania commission has refused to require the Pennsylvania Railroad to notify the consignee of the arrival of a package sent through its package department service. Neither can the road be compelled to notify the consignor that such a package has not been delivered. A firm in Philadelphia shipped to a suburban town a package which lay in the station three months and on which storage charges accrued to the amount of $2.05. The commission holds that to require notifications will entail much clerical labor. The suburban package service is maintained as an accommodation to the passengers, not as a source of revenue.

COURT NEWS.

The Texas railway commission is to appeal to the United States Commerce Court from the ruling of the Interstate Commerce Commission in the case reported at some length elsewhere in this issue.

The Duluth, South Shore & Atlantic has filed a petition in the federal court at Detroit, Mich., for an injunction restraining the enforcement of the state 2 cent fare law on the ground that it is confiscatory.

The Supreme Court of the United States has decided that an employee in the car repair department of a railway is a fellow servant of employees in the operating department. This decision was in a suit against the Grand Trunk Junction Railway. The opinion is by Justice Holmes, who observes that if the fellow servant doctrine is unjust, Congress is the body to change it.

The Humboldt Steamship Company has filed suit in the superior court at Seattle, Wash., against the Alaska Steamship Company, the Pacific Coast Steamship Company, the Northern Pacific Wharves & Trading Company, and the Pacific & Arctic Railway & Navigation Company, together with several of their officers, on a charge of conspiracy in restraint of trade. The petition charges that the Pacific & Arctic Railway & Navigation Company, operating the White Pass & Yukon Railway, has refused to make through traffic arrangements with the Humboldt company and charges its patrons rates from 5 to 30 per cent. higher than the railway's share of the joint rate granted the steamship companies alleged to be parties to the conspiracy.

The United States District court at Cleveland, Ohio, on March 23 imposed fines aggregating $123,000 on four railway and four dock companies on charges of rebating through the payment of a portion of the earnings of the dock companies back to the shippers of ore at the end of a year's business. The four railways that were fined are the Pennsylvania Company, Lake Shore & Michigan Southern, Bessemer & Lake Erie and New York, Chicago & St. Louis; and the dock companies are the Ohio & Western Pennsylvania Dock Company, the Union Dock Company, the Ashtabula Dock Company, and the Pittsburgh & Conneaut Dock Company. Individual indictments against D. R. Hanna and R. L. Ireland, respectively president and general manager of the M. A. Hanna Coal Company, and D. T. McCabe, fourth vice-president of the Pennsylvania, were quashed on recommendation of the Interstate Commerce Commission. In a statement issued at the time of the indictments last year, President McCrea of the Pennsylvania explained that the refunds to

the shippers were in the nature of adjustments in the rates to be paid for the handling of ore over the docks on account of the introduction of improved ore-handling machinery, which was calculated to reduce the cost of handling by an amount not easily determined in advance, and that there was no discrimination between shippers. The defendant corporations pleaded guilty of technical violations of the law for the reason that the contracts for refunds were not mentioned in the published tariffs.

The Mandamus in the Kentucky Coal Case.

The decision of the Commerce Court ordering the Louisville & Nashville and the Southern to perform their duty toward certain coal shippers, which was briefly reported in our last issue, was prepared by Judge Carland. This case came directly to the Commerce Court, having never been before the Interstate Commerce Commission. Besides the Stony Fork and Ralston coal companies there were two others interested. The mines referred to are situated on a short branch of the Louisville & Nashville extending westward from Middlesborough, Ky., the mines being from seven to nine miles out. At Middlesborough the coal would naturally be delivered to the Southern to be transported to points in Georgia, Alabama and other southeastern states. A joint tariff naming rates from these mines had been issued by the Southern, in which the Louisville & Nashville concurred; but the Southern refused to furnish cars, on the claim that the L. & N. was the originating carrier, while the L. & N. refused on the ground that it only performed a switching service. This deadlock between the companies destroyed the complainants' business. At the same time the railways were carrying to the southeastern states coal from other mines in the region without complaint. The complainants had repeatedly requested these two roads to transport their coal. The roads denied the charge that coal from other places was being accepted, but the court finds that the evidence nullifies this denial. The court holds that it has no jurisdiction to consider the question of car distribution, until action has been taken by the Interstate Commerce Commission. Therefore, the peremptory writ of mandamus is granted on the simple ground that, so long as the two companies establish and maintain a through route and a joint rate, they are required to accept coal tendered in reasonable quantities. If there were any question as to the reasonableness of the quantities offered, the Interstate Commerce Commission would be the authority to decide it. The decision is made under Section 23 of the act to regulate commerce, some of the requirements of which are transferred to the act establishing the Commerce Court. This section refers to violations of the law which are sufficient to amount to discrimination; and it is found that discrimination existed in this case. Reference is made also to Section 1 of the act, which makes it the duty of carriers to establish through routes and to provide reasonable facilities for operating such through routes; also to section 7, declaring it unlawful by any means or device to prevent the carriage of freight from being continuous from point of shipment to the place of destination. The railways argued that to discriminate they must be carrying coal for one shipper on conditions less favorable than for another, whereas, in fact, they were taking no coal whatever from the complainants. This is declared to be too narrow a construction, leading to an absurd result. The railways also claim that the Interstate Commerce Commission was the only place to which petitioners could go for relief. In the case of the B. & O. against Pitcairn, the Supreme Court held that the distribution of coal cars was an administrative matter, properly referred to the Interstate Commerce Commission; but in the present case the issue is one of simple compliance with a plain law, not requiring any previous administrative action. Why did these railways agree to establish a through route and publish a joint tariff? This tariff clearly held out that the carriers were ready to transport the coals of the petitioners. The Southern claimed to have filed its joint tariff as agent of the L. & N., but this excuse is not accepted by the court. The order of the court commands the roads to carry this coal, so long as they maintain the joint tariff referred to, or any like tariff.

The section of the Goyaz Railroad, Brazil, from Araguary to Catalao has been opened to traffic.

Railway Officers.

ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

The general offices of the Oklahoma Central having been moved from Purcell, Okla., to Chickasha, Dorset Carter, chief executive officer; G. H. Parker, auditor; and R. C. Boles, cashier, have had their offices transferred to the latter place.

Charles E. Schaff, vice-president in charge of operation of the New York Central Lines west of Buffalo, N. Y., with office at Chicago, has resigned to become president of the Missouri, Kansas & Texas, succeeding A. A. Allen, effective April 15.

Richard Fitzgerald, vice-president and general superintendent of the Chicago Junction Railway, has been elected president, with office at Chicago, succeeding J. A. Spoor, retired. H. F. Poronto, secretary and purchasing agent, has been elected vice-president and secretary, and R. B. Thomson, treasurer, has been elected assistant secretary and treasurer.

George Chester Conn, whose election as vice-president of the Pere Marquette, with office at Detroit, Mich., has been announced in these columns, was born July 1, 1867, at Woburn, Mass., and was educated in the public schools of his native town. He began railway work on October 1, 1884, in the general freight department of the Boston & Lowell, now a part of the Boston & Maine, and he was with the B. & M. until 1888. In November of that year he went to the Pennsylvania Railroad as a traveling freight agent. Two years later he was appointed traveling freight agent of the Canadian Pacific Despatch, and remained with that company until December, 1897, when he was appointed commercial agent of the Flint & Pere Marquette at Minneapolis, Minn. He was then appointed general agent of its successor, the Pere Marquette, and was later made assistant general freight agent at Milwaukee, Wis., of the same road. He left the service of that company in February, 1904, and was then appointed general freight agent of the Minneapolis, St. Paul & Sault Ste. Marie, remaining with that company until March, 1909. He then returned to the service of the Pere Marquette as freight traffic manager, which position he held at the time of his recent election as vice-president of that road.

G. C. Conn.

Operating Officers.

Thomas P. Edgar has been appointed inspector of transportation of the Cincinnati, Hamilton & Dayton.

P. O. Penn has been appointed trainmaster of the Missouri, Kansas & Texas of Texas, with office at Hillsboro, Tex.

W. J. O'Brien, superintendent of the Chicago Junction Railway, has been appointed general superintendent with office at Chicago, succeeding R. Fitzgerald. (See item under Executive, Financial and Legal Officers.)

T. A. Dempsey, superintendent of dining service of the Missouri, Kansas & Texas at St. Louis, Mo., has been appointed superintendent of dining cars of the Rock Island Lines, office at Rock Island, Ill., succeeding F. Stewart.

F. H. Christian, trainmaster of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been appointed trainmaster, with office at Beaumont, Tex., and J. P. Crowley, transportation inspector at Temple, Tex., succeeds Mr. Christian.

J. C. Roth, assistant superintendent of transportation of the Northern Pacific at Tacoma, Wash., has been appointed general superintendent of the North Yakima & Valley, a subsidiary of the Northern Pacific, with office at North Yakima, Wash., succeeding M. S. Meeks. Effective April 1.

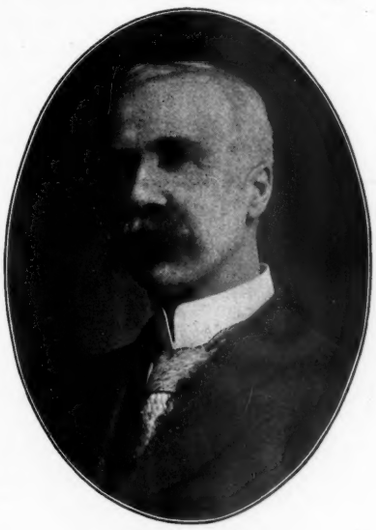
Early in April W. M. Whitenton, general manager of the First district of the Rock Island Lines at Chicago, and F. J. Easley, general superintendent of the same district at Davenport, Iowa, will have their offices removed to Des Moines, Iowa. (See item under Engineering and Rolling Stock Officers.)

C. L. Vaughn, superintendent of transportation of the Louisiana Railway & Navigation Company at Shreveport, La., has been appointed superintendent of car service of the Kansas City Southern, with office at Kansas City, Mo., succeeding W. G. Curren, resigned to accept service with the Baltimore & Ohio.

V. W. Lankey, trainmaster of the Michigan Central at Grayling, Mich., has been appointed trainmaster at Bay City, succeeding W. F. Phillips, resigned. F. W. Bennett, trainmaster of the Detroit & Charlevoix at East Jordan, succeeds Mr. Lankey, and W. L. Peck has been appointed trainmaster of the Detroit & Charlevoix, with office at East Jordan, succeeding Mr. Bennett.

H. H. Shepard, assistant general superintendent of the South Buffalo Railway, at Buffalo, N. Y., has been appointed general superintendent of the Charlotte Harbor & Northern, and will have charge over the construction, transportation, mechanical, roadway and bridges and building departments, with office at Boca Grande, Fla. John Bradley has been appointed superintendent of terminals in charge of the terminals at South Boca Grande.

Donald McDonald, whose appointment as district superintendent of the Intercolonial Railway, with office at Levis, Que., has been announced in these columns, was born on February 28, 1862, at St. Hyacinthe, Que., and was educated at the college of Ste. Anne La Pocatiere. In 1880 he began railway work as night agent and telegrapher on the Intercolonial. Three years later he was appointed agent at Ste. Flavie, and in 1885 was transferred to Chaudiere Junction as joint agent and telegraph operator for the Intercolonial and the Grand Trunk. He was then joint ticket agent of both these companies and the Quebec Central at Levis, Que., which position he held at the time of his recent appointment as superintendent of the Intercolonial Railway for the Montreal and Ste. Flavie district. The late A. R. McDonald, who was superintendent of the Intercolonial from 1879 to 1897, was a brother of Mr. McDonald.



D. McDonald.

Horace C. Grout, who has been appointed superintendent of the Canadian Pacific, with office at Toronto, Ont., was born on March 14, 1881, at Wausau, Wis. He attended the University of Wisconsin from 1900 to 1903. Prior to 1903 he was in railway work as a rodman and instrument man on the Canadian Pacific. In April, 1903, he was appointed resident engineer of the Canadian Pacific, remaining in that position until April, 1909, when he was promoted to assistant superintendent, which position he held at the time of his recent appointment as superintendent, effective April 15.

The Eastern and Northern districts of the Wisconsin division of the Chicago, St. Paul, Minneapolis & Omaha, will be operated as separate divisions, effective April 1. The Eastern division will include the lines between Minneapolis, Minn., and Elroy, Wis., including branches, and the northern division will include the lines north of Northline, Wis., and Eau Claire. Thomas W. Kennedy, superintendent at Eau Claire, will continue at Eau Claire as superintendent of the Eastern division, and J. J. O'Neill, superintendent at Omaha, Neb., has been appointed superintendent of the Northern division, with office at Spooner, Wis. James R. Welch, assistant superintendent at Eau Claire, has been appointed superintendent of the Nebraska division, with office at Omaha, Neb., succeeding Mr. O'Neill. C. D. Stockwell, assistant superintendent of the M. & I. division at St. James, Minn., has been appointed assistant superintendent of the Eastern division, with office at Eau Claire, succeeding Mr. Welch. Peter Copeland, assistant superintendent at Spooner, succeeds Mr. Stockwell, and his former position has been abolished.

Traffic Officers.

R. A. Turner has been appointed advertising manager of the Colorado & Southern, succeeding E. A. Cooper.

J. L. Morgan has been appointed traveling freight agent of the Illinois Central, with office at Brookhaven, Miss.

J. M. Macrae has been appointed district freight agent of the Canadian Northern, with office at Saskatoon, Sask., succeeding C. R. Hill, resigned.

Ira F. Kurtz has been appointed soliciting freight agent of the Lehigh Valley, with office at Geneva, N. Y., succeeding W. J. Sheridan, resigned.

Mark E. Simmons has been appointed district passenger agent of the Chicago Great Western, with office at Omaha, Neb., succeeding Fred Wight, promoted.

Stanley H. Watson has been appointed industrial agent of the New Orleans, Texas & Mexico, and the St. Louis, Brownsville & Mexico, with office at Kingsville, Tex.

J. E. Thayer has been appointed soliciting agent of the Central of Georgia, with office at Albany, Ga., succeeding L. K. Newlin, resigned to go into other business.

John Bickel, commercial agent of the Duluth, South Shore & Atlantic at Chicago, in charge of freight matters, has had his jurisdiction extended over passenger business.

F. T. Magan, dairy agent of the Erie Railroad, with office at Chicago, has resigned, effective April 1, to become manager of the Buffalo Cold Storage Company, Buffalo, N. Y.

I. O. Payne, freight soliciting agent of the Southern Railway at Chattanooga, Tenn., has been appointed commercial agent, with office at Chattanooga; and T. H. Gilbert succeeds Mr. Payne.

F. L. Wemple, assistant general freight agent of the National Lines of Mexico, at Mexico City, has been appointed assistant general freight and passenger agent of the Mexico North Western, effective April 1.

C. A. Boyden, traveling freight agent of the Detroit, Toledo & Ironton at Detroit, Mich., has been appointed division freight agent, with office at Detroit, succeeding D. W. Dirr, resigned to accept service elsewhere.

Herman L. Traber, commercial agent of the Missouri, Oklahoma & Gulf at Kansas City, Mo., has been appointed general freight agent, with office at Muskogee, Okla., and A. O. Von Dorn succeeds Mr. Traber.

William A. Sprott, division freight agent of the Wabash at Toledo, Ohio, has been appointed division freight and passenger agent, with office at Danville, Ill., succeeding C. C. Landers, resigned to accept service elsewhere. W. A. Hopkins, division freight and passenger agent at Moberly, Mo., succeeds Mr. Sprott, and Earle Lind, commercial agent at Hannibal, Mo., succeeds Mr. Hopkins at Moberly. W. N. Price, district freight agent at Buffalo, N. Y., has been appointed general agent with headquarters at San Francisco, Cal., succeeding Z. T. George, resigned to accept service elsewhere.

W. E. Wolfenden, general western passenger agent of the Pere Marquette at Chicago, has been appointed general passenger agent, with office at Detroit, Mich., succeeding H. F. Moeller, resigned. H. J. Gray, district passenger agent at Grand Rapids, Mich., succeeds Mr. Wolfenden. John A. Hewitt has been appointed commercial agent, with headquarters at Kan-

sas City, Mo., a new position; and G. G. Little has been appointed commercial agent, with office at Davenport, Iowa. E. O. Niles has been appointed traveling passenger agent with office at Chicago, succeeding R. H. McCurdy, who has been appointed city ticket agent in place of O. L. Kinney, promoted to city passenger agent. The office of the Pere Marquette-Lehigh Valley line at Omaha, Neb., has been discontinued, and correspondence pertaining to it should be addressed to Mr. Hewitt.

Ellis Farnsworth, district passenger agent of the Missouri Pacific, the St. Louis, Iron Mountain & Southern, and the Texas & Pacific at Chicago, has been appointed general agent in the passenger department of the Missouri Pacific and the St. Louis, Iron Mountain & Southern, with office at Chicago; and George W. Thomas, Southwestern passenger agent of the Chicago & Alton at Dallas, Tex., has been appointed Northern passenger agent of the Texas & Pacific, with headquarters at Chicago. W. R. Trelford, traveling passenger agent of the Missouri Pacific-Iron Mountain system at Dallas, Tex., and C. H. Morgan, traveling passenger agent of the Texas & Pacific at Birmingham, have both been appointed traveling passenger agents of the Texas & Pacific, with office at Chicago. P. A. Baer succeeds Mr. Morgan, and C. S. Blackman succeeds Mr. Trelford. J. K. Walker, city passenger and ticket agent of the Texas & Pacific at Shreveport, La., has been appointed district passenger agent at that place, and B. F. Kitchen has been appointed assistant district passenger agent at Shreveport. J. M. Griffin, passenger and ticket agent of the Missouri Pacific at St. Louis, Mo., has been appointed general agent in the passenger department at that place. N. C. Wooldridge, city passenger and ticket agent of the St. Louis Southwestern at Memphis, Tenn., has been appointed Southeastern passenger agent of the Texas & Pacific, with office at Atlanta, Ga.

Engineering and Rolling Stock Officers.

R. B. Kendig has been appointed chief mechanical engineer of the New York Central & Hudson River, with headquarters at New York.

E. D. C. Chisholm has been appointed resident engineer of the Canadian Pacific, with office at Winnipeg, Man., succeeding W. A. Mather, promoted.

Otis Thayer, assistant superintendent of the Union Pacific, with office at Cheyenne, Wyo., has resigned to accept service with the Southern Pacific at Oakland, Cal.

Early in April J. B. Kilpatrick, superintendent of motive power of the First district of the Rock Island Lines, and W. H. Petersen, engineer of maintenance of way of the same district, both at Davenport, Iowa, will have their offices removed to Des Moines, Iowa.

The Louisville & Nashville has formed a new department of construction and the following appointments have been made: J. H. Peyton, assistant to president, has been appointed chief engineer of construction, H. C. Williams, assistant engineer of construction, has been appointed assistant chief engineer of construction, and W. E. Smith, assistant superintendent at Birmingham, Ala., has been appointed general superintendent of construction, all with headquarters at Louisville, Ky.

W. R. Ladd, assistant superintendent of the Oregon division of the Oregon-Washington Railroad & Navigation Company in charge of mechanical matters at Portland, Ore., has been appointed master mechanic of the Albina shops, with office at Portland; and W. H. Dressel, district foreman of the Northern division, succeeds Mr. Ladd. J. H. Watson, district foreman at La Grande, Ore., has been transferred to the Northern division, succeeding Mr. Dressel; and, as has been announced in these columns, Edward Thomas, shop foreman at La Grande, succeeds Mr. Watson. Frank Leavette succeeds Mr. Thomas.

Phillip P. Mirtz, who has been appointed mechanical engineer of the Lake Shore & Michigan Southern, with office at Cleveland, Ohio, as has been announced in these columns, was born November 20, 1883, at Scranton, Pa. He was educated in the public schools at Scranton, and in 1901 began railway work with the Central Railroad of New Jersey as a mechanical draftsman, having been for two years previous a draftsman apprentice with the American Locomotive Company. He became a mechanical draftsman for the New York, Chicago & St. Louis at Cleveland in 1903, and two years later went to the Erie at Meadville, Pa., where he had the same title. In 1906 he was appointed mechanical draftsman of the Lake Shore & Michigan Southern, was promoted to assistant chief draftsman at the Collingwood locomotive shops in 1907, and two years later was made chief draftsman at the Elkhart locomotive shops of the same company. In 1910 he was made assistant engineer of motive power at Cleveland, and he has recently been made mechanical engineer of the same road, as above noted.

Special Officers.

F. W. Bergman, manager of the Chateau Laurier, Ottawa, Ont., has been appointed general manager of all hotels on the Grand Trunk and Grand Trunk Pacific systems, with headquarters at Ottawa.

OBITUARY.

John J. Burns, formerly for many years superintendent of the First division of the Denver & Rio Grande, died at his home in Denver, Colo., on March 18.

Thomas Green, chief engineer of the Minneapolis, St. Paul & Sault Ste. Marie, died at Minneapolis, Minn., on March 27, after several months' illness, at the age of 45.

George Fail Geagan, formerly livestock agent of the Erie Railroad, at New York, died on March 24, at his home in Passaic, N. J. Mr. Geagan was born on March 6, 1846, at New York, and began railway work in 1870, as superintendent of the stock yards of the Erie Railway at Deposit, N. Y., and was transferred in 1875 to Buffalo. In 1884 he was made livestock agent of the Chicago & Atlantic, at Chicago, and four years later he was appointed livestock agent of the New York, Lake Erie & Western, now the Erie, at New York. He held this position, and that of superintendent of the Weehawken stock yards, until his retirement on account of ill health on December 1, 1910.

R. F. McKenna, former president of the Master Car Builders' Association, and master car builder of the Delaware, Lackawanna & Western from March, 1904, to September, 1909, died on March 16 at Philadelphia, Pa., from the effects of a surgical operation. Mr. McKenna was born on November 14, 1868, at Scranton, Pa., and began railway work as an apprentice on the Delaware, Lackawanna & Western in 1884. In 1891 he was made chief draftsman in the car department. From 1892 to 1893 he was manager of the Buffalo Car Wheel Company. After that he returned to railway work as chief air brake instructor and foreman of the car shops of the Lackawanna at Scranton. In 1899 he was appointed general foreman of the Eastern division at Dover, N. J., where he remained until 1902, when he was appointed general foreman of the Scranton division. The following year he was made superintendent of car shops, and in March, 1904, he was appointed master car builder, from which position he resigned on September 1, 1909, because of the gradual failure of his health. Mr. McKenna's entire railway career had been with the Delaware, Lackawanna & Western. The first act of importance after his appointment as master car builder was to develop the organization and operation of the large car shops at Keyser Valley. He was president of the Central Railway Club at Buffalo in 1908. For a number of years, and until his death, he was chairman of the educational committee of the Railroad Department of the Y. M. C. A. Mr. McKenna's delightful personality, together with his high ideals and strong character made for him a host of friends of whom he was held in the highest regard.

R. F. McKenna.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

THE RUTLAND is figuring on 4 ten-wheel locomotives.

THE COAL & COKE RAILWAY is figuring on 4 consolidation locomotives.

THE BINGHAM & GARFIELD has ordered 4 six-wheel switching locomotives from the Baldwin Locomotive Works.

THE INTERNATIONAL & GREAT NORTHERN has ordered 10 consolidation locomotives from the Baldwin Locomotive Works.

THE ATLANTIC COAST LINE has ordered 15 six-wheel switching locomotives, 8 ten-wheel locomotives and 12 Pacific type locomotives from the Baldwin Locomotive Works.

THE VIRGINIAN RAILWAY has ordered 1 mikado locomotive from the Baldwin Locomotive Works. This locomotive will be a duplicate of the 9 mikado locomotives recently ordered from the Baldwin Locomotive Works, and mentioned in the *Railway Age Gazette* of January 12.

CAR BUILDING.

THE DENVER & RIO GRANDE is reported to be in the market for 2,000 freight and passenger cars.

THE ATLANTIC COAST LINE is in the market for 1,900 box cars, 100 flat cars, and a number of caboose cars and passenger cars.

THE BETHLEHEM STEEL COMPANY, South Bethlehem, Pa., has ordered 50 coke cars from the American Car & Foundry Company.

THE ULSTER & DELAWARE is negotiating with the Pullman Company for 50 box cars and 50 flat cars. The contract is expected to be closed within a few days.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 6 dining cars from the Pullman Company, and two gas-electric motor cars from the General Electric Company.

THE BINGHAM & GARFIELD has ordered 60 gondola cars from the Standard Steel Car Company, and has practically concluded negotiations with that company for 20 general service cars.

THE WABASH has ordered 1,000 stock cars and 700 steel underframe box cars from the American Car & Foundry Company and 500 steel underframe box cars from the Haskell & Barker Car Company.

THE PENNSYLVANIA has ordered 27 passenger cars from the Pressed Steel Car Company, 20 passenger cars from the American Car & Foundry Company, and 20 passenger cars from the Standard Steel Car Company.

THE ATCHISON, TOPEKA & SANTA FE reported last week as being in the market for 15 smoking cars, 10 combination passenger and mail cars, 10 chair cars, 14 three-compartment Jim Crow cars, and one combination passenger and baggage car, has ordered this equipment from the Pullman Company.

IRON AND STEEL.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 16,600 tons of 90-lb. rails, 15,750 tons of 100-lb. rails and 200 tons of 85-lb. rails. Of this order, the Lackawanna Steel Company will roll 1,000 tons; the Pennsylvania Steel Company, 500 tons; the Cambria Steel Company, 500 tons; and the Illinois Steel Company, the balance.

SIGNALING.

New Installations of Block Signals, Interlocking, Telephones for Train Despatching, Etc.

The Pennsylvania, in addition to the 111 miles of new block signaling recently reported in the *Railway Age Gazette*, is planning also to install automatic signals on the Philadelphia division between Dillersville, Pa., and Branch Intersection, 24 miles, double track.

Supply Trade News.

Willis L. Riley, formerly in charge of the drafting department of the Union Pacific freight car department, at Omaha, Neb., has been appointed mechanical engineer and assistant superintendent of the Moore Patent Car Company, St. Paul, Minn.

Jesse Lantz, vice-president of the Goodwin Car Company, New York, died on March 20. Mr. Lantz was actively engaged in business up to the time of his death. He had been continuously connected with the Goodwin Car Company for the past 10 or 12 years.

William Jay Cooke, vice-president of the McGuire-Cummings Manufacturing Company, Chicago, died on March 20 at his residence, 467 North Oak Park avenue, Oak Park, Ill. He was born in Cleveland, Ohio, in 1845, moved to Chicago in 1883, and was one of the founders of the McGuire-Cummings Manufacturing Company in 1885. He had been prominently identified with the railway supply business for the past 25 years.

The re-organization committee of the Allis-Chalmers Company, Milwaukee, Wis., will apply for a receiver on April 1, under the laws of New Jersey, the state in which the company was organized in 1901. Since the company will not technically have defaulted on its $275,000 interest, payable January 1, until the expiration of 90 days' grace after that date, the reorganization committee is unable to obtain the receiver until after April 1.

Dr. P. H. Conradson, chief chemist of the Galena-Signal Oil Company, Franklin, Pa., will on April 10, 11, 12 and 13, deliver a series of lectures in the assembly room of the Permanent Manufacturers' Exhibit of Railway Supplies and Equipment, Karpen building, Chicago, on the Lubrication of Steam Engines, dealing particularly with the use of a high degree of superheat in locomotive practice. The lectures will be accompanied by practical demonstration with laboratory apparatus arranged by Dr. Conradson.

D. W. Smith and Elmer J. Smith, of the Peter Smith Heater Company Detroit, Mich., have purchased the Baker Heater Company of New York, and have moved its offices and shop to 88 Isabella avenue, Detroit, where the business will be operated in connection with the Peter Smith Heater Company. The product of the Baker company will be sold only to steam railways, and the Smith company will make heaters for electric railway cars, as in the past. It is the intention of the new management to improve the line of heaters formerly made by the Baker company. Elmer J. Smith, vice-president and general manager of the Smith company, will be president of the Baker company. Daniel W. Smith, who is president of the Smith company, will be vice-president and general manager of the Baker company, and M. J. Phelan will be secretary of both companies.

The following changes in the sales organization of the Union Switch & Signal Company, Swissvale, Pa., will go into effect on June 1: The eastern division will be in charge of G. A. Blackmore as eastern sales manager, with headquarters in New York, and will be sub-divided into the eastern and southern districts. The western division will be in charge of J. S. Hobson as western sales manager, with headquarters in Chicago, and will be subdivided into the central district, in charge of Aaron Dean as resident manager, with headquarters in Chicago, and the Pacific district, in charge of J. B. Struble as resident manager, with headquarters in San Francisco, Cal. W. M. Vandersluis, now assistant western manager, will become sales engineer for the central district. H. W. Griffin, H. A. Wallace and T. H. Paternal will become sales engineers for the eastern district, and J. L. Brastow will become sales engineer for the southern district, with headquarters at Atlanta, Ga.

The Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has declared a dividend of 1 per cent. on the common stock. The last common dividend was paid in 1907. Dividend is payable April 30. The Westinghouse Electric & Manufacturing Company has declared regular quarterly dividend of 1¾ per cent. on preferred stock. According to a statement issued by the company the question of the next dividend will not be considered for six months. The rate then will be decided upon, a full consideration of the earnings of the company during that period and the then prospects for the future.

Railway Construction.

New Incorporations, Surveys, Etc.

Brownwood North & South.—See St. Louis & San Francisco.

Canadian Pacific.—A contract has been given to F. R. Wilford, to build a section between Trenton, Ont., and Belleville. It is expected that the work will be started in the near future. J. M. R. Fairbairn, assistant chief engineer, Eastern Lines, Montreal, Que.

Chicago & North Western.—This company has given a contract to Winston Brothers, Minneapolis, Minn., for grading the new line of the St. Louis, Peoria & Northwestern, from Peoria, Ill., south to Girard, 90 miles. E. C. Carter, chief engineer, Chicago. (March 8, p. 453.)

Chicago, Milwaukee & Puget Sound.—It is understood that this company is planning to build a branch from Butte, Mont., via Flathead valley to a point in Canada, and that surveys have been made for this line. The company has under consideration the question of building an extension from the Puget Sound line in the state of Washington north to Vancouver, B. C.

Clarsburg & Weston.—See Monongahela Valley Traction.

Denver & Rio Grande.—See item in General News regarding improvements on this road.

Elgin Terminal.—An officer writes that the entire route of this projected belt line has not yet been definitely decided upon. A section is to be built from Elgin, Ill., southwest via St. Charles to Batavia, thence southeast via Aurora to Joliet, thence east to Crown Point, Ind. D. C. Dunlop, president and chief engineer, 140 South Dearborn street, Chicago.

Elkin & Allegheny.—An officer writes denying the report that a 75-mile extension is to be built to Mountain City, Tenn. The company's plans call for building from Elkin, N. C., northwest to Sparta, about 25 miles, through a mountainous country. Track has been laid on 12 miles. J. A. Mills, president and general manager, Raleigh, N. C. (January 26, p. 176.)

Fairmont & Clarksburg.—See Monongahela Valley Traction.

Fairmont & Northern.—See Monongahela Valley Traction.

Grand Trunk.—Announcement has been made that this company will build a five-mile cut-off at Brantford, Ont., to the Tillsonburg branch. The new line will eliminate 20 grade crossings around the city. The work calls for a four-span bridge to be over 300 ft. long over the Grand river. The cost of the improvements will be about $250,000. H. R. Safford, chief engineer, Montreal, Que.

Harriman, Knoxville & Eastern.—According to press reports, this company has completed work on the line from Harriman, Tenn., east to Dossetts, from which point connection is made over the tracks of the Louisville & Nashville to Knoxville. W. J. Clark, chief engineer, Harriman.

Hutchinson & Northern.—Organized in Kansas to build from Hutchinson, Kan., east to a connection with the St. Louis & San Francisco at Burrton, about 15 miles, thence northeast to a connection with the Union Pacific in the northern part of the state. Under the name of the Hutchinson & Western a line is to be built from Hutchinson, west via Huntsville to Hudson, thence west to Larned, or north to Great Bend, about 70 miles. The Hutchinson Commercial Club, and residents of Hutchinson, are back of both projects.

Hutchinson & Western.—See Hutchinson & Northern.

Jacksonville, McRae & Northern.—Application has been made for a charter in Georgia, to build from Jacksonville, Ga., on the Altamaha river, north via McRae to Dublin, about 55 miles. A bridge is to be built over the river at Jacksonville to Barrows Bluff, and a connection is to be made with the Georgia & Florida from that place south to Douglas, 21 miles. The names of the promoters are not given.

Kettle Valley.—According to press reports, contracts are to be let in April, and work will be started a month later on the extension from Coldwater Junction, B. C., to Hope, 50 miles, thence to the Coquahala river. A. McCulloch, chief engineer, Penticton, B. C. (March 8, p. 453.)

Maine Roads (Electric).—Plans are being made to build an electric line from a connection with the Wiscasset, Waterville & Farmington at Albion, Me., northwest to Benton, seven miles. Residents of Albion, Benton and Fairfield are back of the project.

Missouri, Oklahoma & Gulf.—A contract has been given to McCabe & Steen, Fairland, Okla., for building 300 miles, including bridge work, in Oklahoma and Texas. Work is now under way from Fairland, north to Pittsburg, Kan., also from Wagoner, Okla., north to Joplin, Mo. J. J. Harrison, chief engineer, Muskogee, Okla. (March 15, p. 525.)

Monongahela Valley Traction.—This company is to be formed in May, as a consolidation of the Fairmont & Clarksburg, the Fairmont & Northern, and the Clarksburg & Weston, with a capital of $7,000,000 and headquarters at Fairmont, W. Va. Under the name of the Clarksburg & Weston plans have been made to build from Weston, W. Va., north to Clarksburg, 16 miles, and to put up three sub-stations on the line. Track has been laid on eight miles. S. L. Watson, president, and D. Britt, chief engineer, Clarksburg.

National Railways of Mexico.—A contract has been entered into recently with the Mexican government to carry out the project which has been under consideration for several years of building a new line from Vera Cruz, Mex., north via Tampico to Matamoros, 550 miles. One line is to be built from a point on the Interoceanic, about 25 miles from Vera Cruz to Tamos on the Tampico-San Luis Potosi division, 10 miles from Tampico. A second line is to be built from the Tampico-Monterey division, 32 miles from Tampico, to Rosita on the Matamoros-Monterey division, six miles from Matamoros. The company has also been granted a concession to build a branch from a point at or near Tamos to Honey or to Beristain, on the Hidalgo & Northeastern division. This branch will provide a short line from Mexico City to Tampico. The railway company agrees to complete the first 65 miles within two years, and an additional 65 miles each subsequent year until all the work is finished. The government agrees not to grant any subsidy for the construction of a railway within a distance of 10 miles on either side of the new line for a period of 10 years. James M. Reid, chief engineer, Mexico City, Mex.

New Iberia, Lafayette & Northeastern.—An officer writes that the plans call for building from Eunice, La., southeast via Church Point, Lafayette and St. Martinsville, to New Iberia, about 60 miles. The prospects of building are good, but it has not yet been decided when bids will be asked for the work. The company expects to develop a traffic in sugar cane and products, timber, cotton and corn. F. N. Welch, president; H. A. Genung, chief engineer, New Iberia. (December 22, p. 1300.)

New Orleans, Clinton & Birmingham.—An officer writes that a charter has been granted for building a line from Edenborn, La., on the Louisiana Railway & Navigation Company, north to Clinton, 40 miles, and an extension is eventually to be built northwest to Natchez, Miss. At an election to be held in April, if the residents along the proposed line vote a five mills tax in aid of the project, the line will probably be built. A. J. Kerfoot, Jonesboro, La., may be addressed.

Niobrara & Sioux City.—Incorporated in South Dakota with $1,000,000 capital and offices at Pierre, S. D., and at Omaha, Neb. The plans call for building about 150 miles of railway from Niobrara, Neb., east to a point in Woodbury county, Iowa. A branch line is also to be built southwest to O'Neill, Neb. The estimated cost of building the line is $5,000,000. W. E. King, S. G. Peticolas, C. W. Baker and R. R. Kinkaid, all of Omaha, and G. W. Martens, Pierre, S. D., are the directors.

Pennsylvania Railroad.—See Pennsylvania System.

Pennsylvania System.—The record of the mileage of the road on December 31, 1911, shows that the total length of the main line on the lines east of Pittsburgh, Pa., and Erie, is 5,329 miles of first-track, with 1,871 miles of second-track, 551 miles of third-track, 481 miles of fourth-track, and 4,544 miles of company's sidings, a total of 12,776 miles. There was an increase of six miles of first-track, 13 miles of second-track,

three miles of third-track, six miles of fourth-track, and 148 miles of company's sidings, a total increase of 176 miles. On the Pennsylvania lines west of Pittsburgh and Erie, the mileage is 3,098 miles of first-track, 1,352 miles of second-track, 211 miles of third-track, 121 miles of fourth track, and 2,526 miles of company's sidings, a total of 7,308 miles. During the year there was an increase of 187 miles of first-track, 56 miles of second-track, 19 miles of third-track, 20 miles of fourth-track, and 118 miles of company's sidings, a total increase of 400 miles. The mileage of the Vandalia Railroad is first-track 927 miles, second-track 106 miles, third-track eight miles, and company's sidings 682 miles, a total of 1,723 miles. During the year, there was an increase of four miles of first-track and three miles of company's sidings, a total increase of seven miles. The grand total of all lines, including those operated by and associated in interest with the Pennsylvania Railroad is 11,504 miles of first-track, 3,593 miles of second-track, 798 miles of third-track, 619 miles of fourth-track, and 8,722 miles of company's sidings, a total of 25,236 miles. Of this, 6,330 miles of first-track is east of Pittsburgh and Erie, and 5,174 miles is west of Pittsburgh and Erie.

QUANAH, SEYMOUR, DUBLIN & ROCKPORT.—Work is now under way on a section north of Belton, Tex. The plans call for a line from Quanah, near the Oklahoma line, southeast to the port of Rockport, on the Gulf coast, about 500 miles. The promoters are negotiating with several existing roads for trackage rights to secure a temporary through line between the two proposed terminal points as early as possible. The company plans to build from Quanah, southeast to Georgetown, about 300 miles, where connection is to be made with the Missouri, Kansas & Texas, and over that road to Austin. A connecting link between Austin and Lockhart, 30 miles, is to be built, and the tracks of the San Antonio & Aransas Pass will be used from Lockhart to Luling. Bonuses are being raised for the construction of the link between Luling and Rockport. Surveys for the entire line will be finished soon. L. E. Walker, president, Austin; R. Y. Walker, chief engineer, Belton.

SAN PEDRO, LOS ANGELES & SALT LAKE.—An officer writes that the branch from Moapa, Nev., to St. Thomas, 22 miles, will be finished in April, and that the company does not contemplate building any other branches in the near future. E. G. Tilton, chief engineer, Los Angeles, Cal.

SIOUX CITY, MITCHELL & PIERRE.—Incorporated in South Dakota with $3,000,000 capital, to build from Mitchell, S. Dak., northwest to Pierre, about 150 miles. The directors include T. Quale, Blunt; J. B. Rose, Miller; T. S. Hall, Gannvalley; D. B. Miller, Mitchell; A. V. Ewart and C. E. Crow, Pierre.

ST. JOHN & OPHIR.—A contract has been given to the Utah Construction Company, of Ogden, Utah, to build from St. John, Utah, northeast to Ophir, 8½ miles, for the purpose of transporting ore from the Ophir and Cliff mines. The work will be light, and includes 10,000 cu. yds. of cut and fill a mile. Maximum grades will be 7 per cent., maximum curvature 12 deg. It is expected that the work will be finished by June of this year. J. R. Clark, president, Los Angeles, Cal., and F. R. Nicholas, engineer, Ophir, Utah. (March 22, p. 701.)

ST. LOUIS, PEORIA & NORTHWESTERN.—See Chicago & North Western.

ST. LOUIS & SAN FRANCISCO.—The Brownwood North & South has increased its capital from $30,000 to $200,000, it is said, to provide funds for building an extension from May, Tex., north to Wichita Falls, about 150 miles. F. G. Jonah, chief engineer, St. Louis, Mo. (November 17, p. 1036.)

TEMISKAMING & NORTHERN ONTARIO.—A grading contract has been given to McCaffery & McQuigge, Toronto, Ont., to build from Earlton, Ont., to Elk Lake, about 30 miles. The contract calls for the completion of the work by September 1. S. B. Clement, chief engineer and superintendent maintenance, North Bay, Ont. (March 1, p. 409.)

TEXAS ROADS.—The Huntsville Business League has under consideration the question of building a line from Beaumont, Tex., to Waco, about 200 miles. Bonuses have already been secured for $100,000, and others have been promised, making the total $500,000. S. S. Felder is president of the business league, Huntsville.

RAILWAY STRUCTURES.

BRANTFORD, ONT.—See Grand Trunk under Railway Construction.

BROKEN BOW, NEB.—The Chicago, Burlington & Quincy is planning the construction of a new roundhouse and turntable.

CENTRALIA, WASH.—Contracts have been let for building a new roundhouse and machine and car shops for the Northern Pacific, to cost approximately $300,000.

DALLAS, TEX.—The Union Terminal Company has been incorporated with a capital stock of $48,000, representing all of the railways entering Dallas, for the purpose of building a new union passenger station, and a terminal railway.

DOUGLAS, ARIZ.—The El Paso & Southwestern is planning the construction of a new passenger station to cost $25,000.

GARRETT, IND.—The Baltimore & Ohio will begin work early in April on a general enlargement of its terminal facilities, including the erection of a new roundhouse, turntable and pits, and the enlargement of shops to handle classified repairs.

JACKSONVILLE, GA.—See Jacksonville, McRae & Northern under Railway Construction.

MACON, GA.—The Southern Railway will make temporary improvements at a cost of $10,000 for handling passengers during the annual re-union of the United Confederate Veterans, to be held in Macon on May 7-9. The work includes new baggage rooms, extensions to platforms, enlargement of ticket offices, etc.

NEW CARLISLE, QUE.—The Quebec Oriental and the Atlantic, Quebec & Western have under consideration the question of building joint shops at New Carlisle.

NEW YORK, N. Y.—The Lehigh Valley is planning to build a reinforced concrete grain elevator at its terminus in New York harbor.

NORFOLK, VA.—An officer of the Norfolk & Western writes that the plans are not yet completed for the new coal pier at Lamberts Point. (March 27, p. 702.)

OUTLOOK, SASK.—See Swift Current, Sask.

OWOSSO, MICH.—The Ann Arbor is perfecting plans for new car shops, a 40-stall roundhouse, machine, paint and repair shops, and a smelter plant, which will cost approximately $400,000, with the new trackage proposed. The new car shops will replace a building half the size of the proposed new one.

REGINA, SASK.—See Swift Current, Sask.

ST. JOHN, N. B.—The harbor improvements to be carried out at Courtenay Bay, St. John, for which a contract was given to Norton, Griffiths & Co., including the construction of a breakwater, dredging work in the harbor, reclaiming a site for railway terminals, and constructing about 4,890 ft. of wharves, are being carried out by the Department of Public Works, Ottawa, Ont. This is wholly a government undertaking. This work has no present relation to the work of the National Transcontinental (Grand Trunk Pacific). (February 23, p. 361.)

ST. THOMAS, ONT.—The London & Lake Erie Transportation Company will put up new car barns at St. Thomas, to cost $20,000.

SWIFT CURRENT, SASK.—The Canadian Pacific has given contracts for building roundhouse at Swift Current at Outlook, at Regina, and at Wilkie.

WILKIE, SASK.—See Swift Current, Sask.

Trains now operate from Lagos to the junction of the Baro-Kano line at Minna, a distance of 467 miles, and on to Baro-Kano. The work of improving the first section between Lagos and Ibadan in order to remove sharp curves and dangerous grades at a cost of $1,000,000 is approaching completion, and when it is finished it is estimated that the cost of haulage will be reduced by nearly 50 per cent. The development effected by the railways is shown by the increasing revenue which they obtain, for, whereas in 1903 the revenue amounted to only $250,000, in 1907 it exceeded $500,000, while in 1910 it was $1,300,000. The receipts for last year are expected to exceed $1,500,000, and for 1912 they are estimated at $1,750,000.

Railway Financial News.

Artesian Belt Railroad.—This property has been sold for $200,000. The names of the interests represented by the purchaser have not been made public. The road runs from Macdona, Tex., to Christine, 43 miles.

Chicago, Memphis & Gulf.—See Illinois Central.

Chicago, Rock Island & Pacific.—President Mudge predicts much larger net earnings for the balance of the fiscal year, basing his prediction on the steady increase in freight traffic, large amounts of freight which were offered during snow blockades, large amount of grain in farmers' hands in Rock Island territory and excellent crop conditions in that territory.

Denver & Rio Grande.—See an item in regard to the use of the proceeds of the income bonds in General News.

Georgia & Florida.—Stockholders have voted to authorize $2,000,000 general mortgage 6 per cent. bonds. The bonds have been underwritten, it is said, on a basis of 52. The proceeds will be used to retire floating debt and to pay off equipment obligations.

Grand Trunk.—The Canadian senate has passed a bill authorizing the company to acquire bonds and debentures of the Grand Trunk Western to the extent of $30,000,000; and, for the purpose of aiding any existing company, or company to be incorporated, to issue perpetual consolidated debenture stock bearing interest not exceeding 4 per cent., provided that the annual interest payable shall not exceed £250,000, the new issues to rank with the existing consolidated debenture stock of the company.

See an item in regard to steamships to New York in Traffic News.

Illinois Central.—Suit, it is understood, will probably be brought against the Chicago, Memphis & Gulf to compel it to carry out the terms of an agreement of sale to the Illinois Central. New interests acquired the C. M. & G. in 1909, and they will defend the suit on the ground that an agreement to sell the railway property before the railway was built is illegal.

Kansas City, Mexico & Orient.—See comments on the reorganization of this road in our editorial columns.

The protective committee, Lord Monson, chairman, has sent out deposit agreements under which it asks the deposit of first mortgage bonds. This agreement provides that bonds deposited may be withdrawn only after the committee has adopted a plan of reorganization. The agreement does not bind the committee to adopt a plan in the immediate future.

Minneapolis, St. Paul & Sault Ste. Marie.—A press despatch from Marinette, Wis., says that the Soo is to take over the Wisconsin & Michigan, which runs from Marinette, Wis., to Iron Mountain, Mich., and crosses the Soo at Faithron Junction, Mich.

Missouri Pacific.—This company has sold to Speyer & Co., New York, $5,000,000 5 per cent. notes of 1911-1914. This is the balance of $25,000,000 notes authorized in 1911 and secured by collateral which includes $9,800,000 D. & R. G. preferred, $15,000,000 D. & R. G. common, $7,000,000 Wabash preferred and $5,000,000 Texas & Pacific common. President Bush is quoted as saying that this will probably be the last short-term financing that the Missouri Pacific will have to do. The details of a mortgage to be placed on the St. Louis, Iron Mountain & Southern are now being considered.

New York, New Haven & Hartford.—A. S. May, treasurer of the company, has been elected a director temporarily, succeeding Professor G. J. Brush, deceased. Mr. May's election is for the purpose of maintaining a majority of the board residents of Connecticut.

Pennsylvania Railroad.—On December 31, 1911, this company operated 25,237.5 miles of track. The number of stockholders on March 1 was 73,567, showing an increase of 7,744 over last year. This number does not include the stockholders of the various subsidiaries. The lines East and West together now operate 11,504 miles of first track, 3,593 miles of second track, 798 miles of third track, and 619 miles of fourth track. There are 8,722.27 miles of sidings. The increase in the trackage during 1911 was 620 miles.

St. Louis & San Francisco.—James N. Wallace, president of the Central Trust Company, New York, has been elected a director of the St. Louis & San Francisco.

St. Louis Southwestern.—Stockholders are to meet April 17 to vote on the question of authorizing $75,000,000 additional common stock and $100,000,000 first terminal and unifying refunding 5 per cent. bonds.

Southern Pacific.—Representative Smith of California, has introduced in the House of Representatives at Washington a bill appropriating $1,830,673, to reimburse the Southern Pacific for work performed and money spent in controlling the break in the Colorado river, and preventing the flooding of the Imperial valley, California.

Temiskaming & Northern Ontario.—The Ontario parliament has before it a bill providing that the location of the line and all branches; all plans of works, by-laws, fixing of fares and tolls for all traffic, etc., shall be subject to the approval of the Lieutenant-Governor in council. The bill also provides for validating the agreements between the Temiskaming & Northern Ontario and the Grand Trunk regarding running rights by the Grand Trunk over the Temiskaming & Northern Ontario between Cochrane and North Bay.

Virginian Railway.—This company has sold $25,000,000 first mortgage 5 per cent. bonds to a syndicate headed by the National City Bank and Kissel, Kinnicutt & Co., both of New York, and Lee, Higginson & Co., of Boston.

The capitalization of the Virginian Railway is now $25,000,000 first mortgage bonds, $2,400,000 equipment trust certificates, $29,000,000 preferred stock, and $34,245,000 common stock. The Rogers estate takes the preferred stock in settlement of its claims and ceases to be a creditor of the road. The Rogers interests, directly or through the Tidewater Company, own nearly all of the preferred and common stock.

The sale of $25,000,000 bonds is to retire $17,000,000 first lien 5-year 6 per cent. notes of the Tidewater Company. These notes have been called for redemption at 101 on June 1, 1912, and are secured by $33,500,000 first mortgage 5 per cent. bonds of the Virginian Railway and by the personal guarantee of the late H. H. Rogers. The notes are convertible into the Virginian Railway bonds any time within the next month.

Wisconsin & Michigan.—See Minneapolis, St. Paul & Sault Ste. Marie.

With regard to the construction of a railway from Beira, Portuguese East Africa, to the Zambesi river and thence to Nyasaland it is learned that the government proposes to purchase from the British Central Africa Company the subsidy lands to which the latter is entitled in connection with the construction of the Shire Highlands Railway for $876,000. The government will also guarantee 4 per cent. interest for a period of 10 years on $2,433,000 capital necessary for constructing the line from the Zambesi northward to Port Herald in Nyasaland. The northern line, which will begin at Port Herald, the present terminus of the Shire Highlands Railway, will run along the bank of the Shire river and touch the Zambesi at Kaia, to which place the Zambesi is navigable all the year round. This section is about 70 miles in length, and, like the rest of the system, will be of 3 ft. 6 in. gage. The construction of the 173 miles of railway from Beira through the Mozambique Company's territories to the Zambesi—which is a part of the general scheme—will, it is expected, commence simultaneously with that of the northern section. There are no serious engineering difficulties on either section of the line, which, when completed, will insure direct railway communication between the sea at Beira and the heart of Nyasaland, a distance of about 350 miles. It is understood that the necessary financial arrangements for building both railways are nearing completion, and that the contract between the government and the British Central Africa Company is being drafted. Northwards of Blantyre, the limit of the rails, the question is being considered of extending the line to the shores of Lake Nyasa, by way of Zomba, a distance of over 100 miles. This, however, is a matter for the future.